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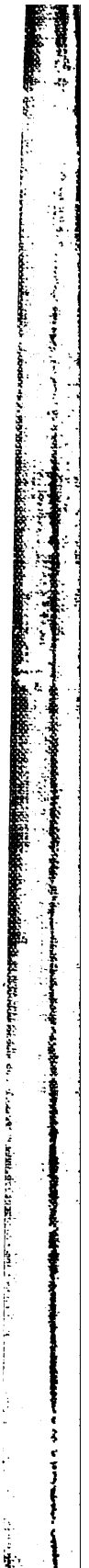
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ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

OF THE

CITY OF PROVIDENCE.

[Presented July 8, 1878.]



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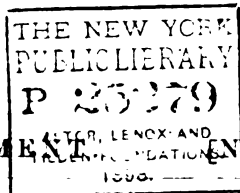
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# ANNUAL REPORT OF THE SCHOOL COMMITTEE

*Compliments of*

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DANIEL LEACH,

SUPERINTENDENT OF SCHOOLS



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## REPORT.

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TO THE HONORABLE THE CITY COUNCIL OF THE CITY  
OF PROVIDENCE:

The committee do not deem it necessary, in presenting their annual report, to recite at length the statistics of the schools, which are accessible in other forms, and which have not materially changed within the past year. The attendance has been somewhat diminished, partly on account of the pressure of the times, and partly from the unusual prevalence of disease. This latter cause affected chiefly the primary and intermediate schools, where in many cases the numbers have always been too great for health or discipline.

It is now fifty years since the establishment of the primary grade, upon the recommendation of a committee of which President Wayland was chairman. This is, therefore, the jubilee year of the primary schools, and it is becoming that they should receive our special attention. During the whole of this period, while they have been in general faithfully managed, and have been of great value to the community, they have suffered for want of suitable accommodations. We gratefully acknowledge that there has been a marked improvement in this respect, so that some of our primary and inter-

mediate school-buildings are all that we could desire. We feel obliged, however, to call your attention to existing defects.

The average number of pupils in our primary school rooms is over fifty, while in many cases the number reaches seventy, and in two or three known instances has passed beyond a hundred. It is manifest that such numbers cannot be comfortably accommodated in the rooms provided, and it is worthy of note that some of the poorest rooms have the greatest number of children. This evil is increased by the fact that children in the lower schools are more susceptible to injury from an impure atmosphere than older ones, as they are also more liable to contagious diseases. On the whole, we feel that there is no want so pressing as that of better accommodations for our primary schools.

Your Committee therefore respectfully recommend that measures for relief be taken, particularly in the Carpenter, Federal, and Ring street schools; also in the school on Mount Pleasant; and those in Friendship, Public, and Warren streets. It is very evident that in their present condition they are no credit to our city; and it is probable that not only every member of the school committee, but also every member of your honorable body, would prefer to keep his children at home, rather than subject them to the dangers and discomforts of such overcrowded rooms. While we regret the necessity of any increased expense, at a time when our citizens are feeling the need of strict economy, both in public and private, we cannot believe that the city of Providence has any less interest in her primary schools than in former times, nor that she will suffer them to



languish for want of proper care. What we need is more rooms, and these may be obtained temporarily, at least, at a very low rate. As in some of our districts the population is very changeable, and business is encroaching upon dwelling-houses, and driving families to other localities, it is impossible to decide what will be the best place for a permanent building. We ought, therefore, to make use of such houses as can be hired and fitted up at a small expense for a temporary purpose. In this way our children would not have to travel long distances, and the convenience and health of the community would be justly regarded.

In reference to the salaries of the teachers, we regret exceedingly that it has been deemed necessary to make any reduction, where already our standard is so low, and where not only other New England cities, but also many towns, show a larger scale of expenditure. We think that something is due to faithful service beyond that which can be exacted by absolute compulsion; and we would respectfully suggest that it would be very unwise policy on the part of the city of Providence to experiment, in order to find the lowest possible salaries at which teachers may be employed. It is a serious question, that has received much discussion of late, whether teachers of the same grade should in all cases receive the same compensation. If your honorable body are to take the salaries of the teachers into special consideration, we would earnestly recommend that great care should be exercised not to cut down the salaries of approved and experienced teachers in such a manner as to make them uneasy in their position, and to lower their self-respect. If we would have the instructors of our

children labor for something else than the mere stipend they receive, and have a higher object than to secure their daily bread, it will be necessary to relieve them somewhat from constant anxiety as to their means of support, and to give them opportunities of improvement and personal culture. It would be well if the community were more thoroughly and deeply impressed with the laborious and difficult nature of the teacher's position. The loss, within a few years, of some of our most valuable teachers by death, has brought to light more plainly than ever their self-sacrificing labors, and should serve not only to awaken sympathy for their trials, but also to give a new respect to their profession. It may be added, that some of our ablest teachers have been obliged to deprive themselves of needed recreation for the summer, on account of the reduction of their salaries.

While the schools of our city have hitherto maintained a fair comparison with those of other places, we cannot uphold this standard, if so great a difference is made in the manner in which they are supported. If the reduction of salaries is continued, the inevitable result will be witnessed, in the course of years, of a lowering of character in those who are required to accept the smallest amount for which their services can be obtained. If it would be folly to compete with other cities in the way of extravagance, it would be still greater folly to advertise that none need apply for a situation here, unless willing to accept a lower salary than is offered elsewhere.

A matter of great practical importance at the present time is that of instruction in sewing. This department has been faithfully cultivated for several years, and has received the unvarying testimony of parents and those

most interested, to its increasing value. The depression of the times makes still more evident the need of this instruction, as a means of practical help to the poor, of improving their moral condition and their home life, by imparting habits of order and neatness, and by training young girls to self-support ; and thus as a means, indirectly, of saving to the city. While all admit the advantages of this instruction in our schools, there is no evidence that it can be done except by special teachers. We hold it to be impossible for the regular teachers to give the personal attention which this art requires, and at the same time fulfil their duties to the remainder of the school. In some schools this branch is not required at all ; and therefore the two teachers hitherto employed may perform the work to a high degree of advantage. We therefore respectfully recommend that the same appropriation may be made as in former years for this most useful department.

The committee take pleasure in referring to the excellent condition of the grammar schools, which are now generally provided with suitable buildings, their pleasant rooms not being overcrowded, and the instruction and discipline of the schools affording much ground for commendation. It is greatly to be hoped that no effort will be made, by closing rooms, to increase the number of pupils to a teacher, where there are already as many as can be profitably taught.

The high school, which has now been in existence thirty-five years, and has given instruction to more than five thousand pupils, is about to enter, we trust, upon an enlarged career of usefulness. The new building will furnish room for seven hundred pupils, and is far better suited in every way to their healthy advancement. The

teachers who have been so faithful, and have achieved such success amid the disadvantages under which they have labored, will now have increased motives for earnest effort. We trust that the pressure on our lower schools will be removed by judicious promotion, and that every facility will be given to the high school to accomplish its great design. This beautiful building will be only a monument of shame to our city if we fail to make adequate appropriations for the carrying on of the work for which it was erected. While we heartily accord with your honorable body, that every exertion should be used to prevent the waste of money in any and all of our public works, we believe that to foster our schools is the truest economy. To secure the services of teachers of the highest character and attainments; to provide suitable rooms for the children, that their life and health may not be unnecessarily endangered; to surround them with good influences, so that their morals and deportment may be carefully nurtured; to discipline their minds, and not only to store them with useful knowledge, but to awaken the love of all good learning; and to set before them high aims, which shall act as a stimulus throughout life;—these are a portion of the objects of which we are made guardians. For these we should be willing to make sacrifices; and so long as taxes are levied, and appropriations are made for any purpose whatever, from our city treasury, there can be none more important or more sacred than the efficient care of our public schools.

On behalf of the committee,

JAMES G. VOSE.

JOSEPH F. BROWN.

JOSEPH E. C. FARNHAM.

# EXTRACTS

FROM THE

## QUARTERLY REPORTS OF THE SUPERINTENDENT.

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PROVIDENCE, Nov. 12, 1877.

*To the School Committee of the City of Providence :*

GENTLEMEN, — There have been but few important changes in the character and condition of our schools the past term. In some sections of the city there has been an unusual amount of sickness, which has caused a very large per cent. of absence in our Intermediate and Primary Schools.

With but few exceptions, our schools are in a very good condition ; and the work that has been done, both by teachers and pupils, has been highly satisfactory. All the schools have been visited, most of them several times, and the first classes in each grade have been carefully examined by the Superintendent in all the branches pursued.

There has been commendable progress in all the different studies. The instruction in reading has been less satisfactory than in any other study. This is to be attributed in a great measure, if not entirely, to the fact

that the reading-books now in our schools have been used so many years, and the scholars have heard the pieces read so many times that they can repeat many of them almost *verbatim*; so that they often read from memory, and not from sight.

While the frequent changes of books in school is a great and serious evil, and never should be allowed but for the strongest reasons, reading-books form an exception to the general rule. It must be apparent to all that children cannot be taught to read well when they are so familiar with the pieces to be read that they can repeat the words without looking on the book. At a proper time, when it can be done without increasing the expenses of our schools, a change in our reading-books is very desirable. The reading-books now in our schools have been in use nearly twenty years.

Two Grammar School buildings have been finished and dedicated the past term, — one on Oxford street and one on Candace street.

It has been deemed necessary to make a very large outlay for school-buildings within a few years past, which will undoubtedly meet the demands for many years. When the High School building is completed, and Julian street enlarged, and an Intermediate and Primary School for the Fourth and Seventh Wards, and a Grammar School building for the western section of the Ninth Ward are supplied, there will not be needed any further outlay for school-buildings for a long time.

In making provision for school accommodations, it is a wise economy to furnish seats not only for the present number of pupils in each locality, but also to supply some additional ones for the prospective increase of

pupils in the neighborhood of each school. Where the population is so changeable as it is in some sections of the city, and where there is often an increase or diminution of an hundred pupils in a district in a single term, it is imperatively necessary that there should be extra seats in each house to meet this often occurring necessity.

There are now quite a number of children attending our schools who are not residents of the city. It is an important question for the Committee to consider whether they should be allowed to remain in our schools without paying for the privilege.

We have now in the First District, 5 school-buildings, with 31 rooms and 1,468 pupils; in the Second District there are 7 buildings, with 35 rooms and 1,863 pupils; in the Third District there are 5 buildings, with 28 rooms and 1,518 pupils; in the Fourth District there are 4 buildings,—besides the old Elm street house, now used for evening schools,—with 28 rooms and 1,189 pupils; in the Fifth District there are 7 buildings, with 44 rooms and 2,216 pupils; in the Sixth District there are 8 buildings,—besides the old building on Oxford street, now unoccupied,—with 38 rooms and 1,976 pupils: making in all 44 buildings,—besides the state and the town clerk's office in the Ninth Ward,—with 234 rooms and 12,306 pupils, without including the High School,—an average of 52 pupils to room. Eight of the rooms are large, and designed for two teachers in each room. All the other rooms are intended for a single teacher, with an average of 45 to 50 pupils each. There are seven unoccupied rooms, three of them in the new buildings, and four that are vacant on account of the removal of pupils from the district; besides the old buildings on Orms, Oxford, and Scott streets.

As promotions are made and classes formed in all our schools, except the High School, only twice a year, it is impossible, without breaking up classes, on account of frequent removals, sickness, and other causes, to keep exactly the same number of pupils in each room during the term.

In six rooms for Primary scholars in the Third District, 570 pupils have been received the past term, an average of 95 to a small room designed for one teacher. In two rooms for Primary scholars in Public street, 197 pupils have been admitted into two small rooms.

We have now 86 schools, — 1 High, 11 Grammar, 35 Intermediate, and 39 Primary, with 287 teachers and 12,800 pupils, — an increase of 488 during the year. We have 86 schools and 286 teachers, — an average of 44 pupils to a teacher. Of this number, 500 have been received into the High School, 3,689 into the Grammar Schools, 3,185 into the Intermediate, and 5,432 into the Primary Schools.

All of which is respectfully submitted.

DANIEL LEACH,

*Superintendent of Schools.*

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PROVIDENCE, Feb. 8, 1878.

*To the School Committee of the City of Providence :*

GENTLEMEN, — We propose to consider briefly some of the characteristics of a good school, and to suggest some of the means and agencies by which they may be secured. On a subject of such universal interest, and so closely and intimately related to the highest welfare



of the young, and to the elevation and permanency of our social institutions, there should be no vague speculations, no fanciful, untried theories. What we specially need are the practical results of the largest experience of the ablest minds that have been devoted to this great work.

Teaching, when considered in its widest and most comprehensive sense, embracing not only the present but the future, is the science of all sciences and the art of all arts. It lays the only foundation of all that is great and noble in the development of man's entire being.

Truth is the vital element in the growth of the human soul, and it is this that primarily and mainly distinguishes the rational from the irrational mind.

The science of teaching must be learned, like all other sciences, by successful experiment. It is founded solely on facts that have been ascertained after long and careful trials, by those who were fully competent to make them. Speculation and theories in regard to modes and methods are utterly worthless till they have been put to a right test, and have been proved to be worthy of adoption.

In the communication of truth there are two factors, the recipient mind and the living teacher. Both should be actively and vigorously engaged, while the minds of the pupils, with these various powers and faculties, are to be quickened and stimulated. The teacher should have not only the best skill and the best methods, but should be furnished with all the means and facilities for imparting instruction that his great work demands.

In the first place, a true teacher must have a right method. This is important in regard to all branches

taught, but more especially in teaching reading. One of the first things a child learns is words, with which he connects his incipient thoughts. This knowledge is acquired primarily by hearing these words spoken. Subsequently he learns to pronounce them, and to use them to express what is in his own mind.

There are two methods that have been employed in teaching very young children to read, with various success. One is, to teach the names of all the letters of the alphabet before combining them into words; the other is to begin with easy words, omitting the names and sounds of the letters until the pupils can read easy sentences. There are objections to both methods, when followed exclusively.

By teaching the alphabet alone, valuable time is wasted, and the progress of the pupil is very much retarded. By the word method simply, the pupil seems to be making rapid progress, but it is soon found that each new word is to be learned separately, without any assistance from his previous acquisitions.

The true and most successful plan is the combination of the two, beginning with very short words, the names of familiar objects, which can be learned almost as readily as a single letter, and then to learn the names of the letters that compose them with their true phonetic sounds. This is now practised by the best and most successful teachers.

There are, however, in teaching reading, two processes that should not be confounded, the mechanical and the intellectual. The first consists in so training the vocal organs as to give the exact sound of each letter and word, and also to read any sentence with facility at

sight. This is the first and most essential characteristic of good reading, and can be acquired only but by long and careful drilling.

It is evident that a pupil, in order to gain this ability, must read a large number of lessons that are fresh and new to him. When he has read a piece so often, or heard it read by others, that he can repeat it from memory, he will learn but little in the pronunciation of new words.

The intellectual process in reading is entirely different. This consists in a rapid mental interpretation of the exact meaning of each word, and expressing with proper modulation, emphasis, and inflection the thoughts of the writer with their full force and meaning. To do this effectively requires great familiarity with the pieces to be read. These must be carefully studied, both in reference to the meaning and the derivation of the words. It is evident from the short time that he can be allowed to this exercise, each term, only a few lessons can be read in this thorough manner; and these should be the choicest specimens of English literature, both in poetry and prose.

It is not and ought not to be the primary object of reading in our schools to teach children to read in public with the graces and skill of an elocutionist, but to develop a correct taste, — to read silently and understandingly at the fireside, so as to derive both pleasure and profit. Of all the acquisitions of youth, this is one of the most important, as it is the main power of all future improvement. To gain accurate and vivid knowledge from the printed page, to garner the noblest thoughts of the wisest men in every age, to catch the

inspiration of genius in all their force and beauty from the written symbols of thought, requires a most thorough and careful training, both in the mechanical and intellectual process of reading.

One of the most prominent hinderances that teachers have in teaching reading successfully is the habits that children have formed out of school when reading to themselves. They universally read too fast, with too little thought and reflection. They catch but glimpses of the meaning of what is written. In addition to this, the books that they are accustomed to read often have a most pernicious influence in corrupting their taste, and in vitiating correct mental habits. The nursery tales and absurd legends of olden time, with which they are often familiar, fill their imaginations with pictures and scenes and the wildest dreams that a corrupt fancy ever conceived. These leave their impressions for years on the youthful mind, and often have a permanent influence on their future character. The highest aim, then, of a teacher should not be to teach children to read fluently and correctly, but to inspire them with a taste and love for the purest treasures of knowledge.

Spelling is also a very essential branch of study in our schools, and its relative importance has been too often overlooked. An ability to spell correctly is not only indispensable in writing, but is a very great aid in the first steps in reading.

Some teachers contend that pupils should not learn to spell a word without being able at the same time to define and explain its meaning. However plausible this may appear in theory, it is utterly impossible in practice. There are a very large class of words the use and mean-

ing of which can be understood only as they are employed in sentences. The true theory of teaching is to teach one thing at a time thoroughly. It is by no means wise, when a pupil is attempting to learn one thing, to compel him to learn another, and often of more difficult acquisition. The attempt to do this is one of the most prominent defects in teaching, that of confounding words and ideas. Pupils are often required to define one word, the meaning of which is unknown, by another whose meaning is equally unknown. No one can have an exact knowledge of the meaning of a word until he can use it correctly to express some thought or feeling of his own mind.

It is a fault of many teachers to give too much prominence to oral spelling, to the neglect of defining and explaining the right use of the words spelled. There is no exercise in the school so important, none that has been so frequently and emphatically enforced, as that of teaching the pupils, at the proper time, the correct use of language and the precise meaning of words. This is the *great* work of the true teacher. It should be one of the first as well as one of the last exercises of the school. An ability to do this successfully should ever be regarded as one of the highest qualifications. The best evidence of the superior skill of a teacher consists in his being able so to analyze the elements of knowledge and present them to the minds of his pupils that they can readily apprehend them, and find for themselves the proper classification.

There has been a very decided improvement in the method of teaching geography and history in most of our schools. The old practice of crowding the memory

with useless dates, details, and descriptions has been in most cases abandoned. Geography and history are now very generally taught from maps drawn by the pupils themselves on the blackboard. A brief outline only in each study is now attempted. The natural features of each country, modified by climate and location, with its varied productions, industries, and trades, together with man's social and civil state, form the principal topics that pupils are required to learn.

In the study of history, this old practice of committing to memory page after page in the exact words of the book, is now almost universally repudiated. It cannot be too emphatically condemned. The most important facts for pupils to learn are the causes that have contributed to human progress, the great civil and social changes that have taken place, and the prominent actors connected with them. There is no study, when properly taught, that is so full of interest and that opens such a wide field of useful knowledge as history. It should, however, never be studied except in connection with geography, and always illustrated with maps.

There is a tendency at the present time to undervalue or ignore the relative importance of our Primary Schools; whereas they should receive special attention and fostering care. None but teachers of the largest experience and tenderest sympathies should have charge of them. The delicate organism of the youthful mind, with its budding intellect, requires the most consummate skill and wisdom for its true development. The foundation of a noble superstructure should never be laid by unskilful hands. The most important period of a pupil's life is from four to eight years of age. When

young children are in school their minds should always be pleasantly and actively employed. They should not be confined too long at a time, nor kept in a state of vacancy, like motionless statues.

The influence of home on the character of our school is very great, and is not fully appreciated. None but those who are familiar with the difference in the progress of children whose minds are quickened and stimulated at the fireside, and those who receive no encouragement or assistance, can fully appreciate how much can be done by sympathetic co-operation.

It is in cultured homes that we find by far the most effective teaching. It is there that the tender minds of youth receive their first and most permanent impressions. The hallowed influence of the home has often kindled the fires of genius, and brightened many a pathway through the whole journey of life. It is to refined, cultured, Christian woman that we are to look for whatever is pure and manly, for the upbuilding and adorning noble character.

Character is and ever should be the primal aim and purpose of all culture. It is the very foundation of all that is great in the development of mind. It is character alone, the resultant of moral and intellectual forces, that can exalt a people. A highly cultured intellect, when allied to and guided by a purely moral Christian force, elevates man to the companionship of angels ; but when prostituted to the control of the baser appetites and passions, degrades men to the level of the brutes.

All material greatness passes away ; works of art and monuments of skill crumble to the dust ; but character, pure adamant in its structure, ever confers imper-

ishable dignity and worth, quickens the life-blood of humanity, and cements the bond of universal brotherhood. It lives when all else perishes, lives for all time.

Our schools, taken as a whole, are in as satisfactory condition as could be expected, from the unusual amount of sickness that has prevailed. The measles and diphtheria have been very prevalent among young children, and have caused a very large per cent. of absence in our Intermediate and Primary Schools. Many poor children also have been detained at home for the want of shoes and proper clothing. The whole number of pupils registered is 11,729.

All which is respectfully submitted.

DANIEL LEACH,

*Superintendent of Schools.*

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PROVIDENCE, April 26, 1878.

*To the School Committee of the City of Providence:*

GENTLEMEN, — As it is our continual aim and purpose ever to improve the character of our schools, and to bring them to the highest possible state of efficiency, we should employ the best means and agencies that our own observation and experience, and that of others, have proved to be most successful. Wherever there are defects, the remedy should be wisely and promptly applied. It is, however, no part of wisdom to rush from one extreme to its opposites, or to complain of defects without being able to point out specifically how improvement could be made. Novelties in methods, which the curious and inexperienced



theorists are constantly recommending as worthy of all credence, and which should supplant all others, should be received with caution and distrust. In the practice of all the arts, theory without experience is one thing, but successful practice a very different thing.

The most confident and sanguine theorists have often failed when they come to put in practice what they fancied was so easy and so important. There are so many circumstances affecting the character of a school at different times, that no correct judgment can be formed of its true condition, without considering all the favorable and unfavorable influences with which it is surrounded.

One of the most efficient aids a teacher can receive is the sympathy and co-operation of parents. Where home influence is wanting, the duties and trials of a teacher are very much increased, and the results of his labor far less satisfactory.

There seems to be an impression on a few minds, which is gaining strength, that pupils in some of our schools are overworked, and that their health is suffering by too severe study. This is a subject that should receive the most thoughtful and careful consideration. There is no other relating to our schools of such vital importance. Physical vigor should never, under any circumstances, be sacrificed to mental culture. Knowledge obtained by the loss of health is but a poor and miserable compensation for its cost. No one topic has been oftener urged in previous reports than that of carefully and wisely guarding against any and all influences that would impair or endanger the health of pupils. If our scholars are less vigorous than formerly, the true cause should, if possible, be ascertained and removed

without delay. And if our schools are in any measure responsible for this supposed diminution of physical vigor, such changes should be made at once that will remedy the evil.

In regard to the course of studies that is marked out for our schools, I do not see how it could be more liberal or accommodating. It is left almost entirely to parents to decide, not only what their children shall study, but how much. The only thing that is absolutely required is, that whatever is attempted shall be thoroughly and perfectly learned.

The prescribed course of studies for our Intermediate and Primary Schools is for two and a half years in each. Pupils in vigorous health, when aided by their parents, can finish the course in each in two years, or they are allowed to spend three or more, just as their parents wish, and their health requires. The studies for the Grammar Schools are arranged for four years. And pupils who wish to make the most of their time can accomplish all that is required in three years, or, if they wish to remain longer in school, there is no hinderance whatever. Pupils are even allowed to take but one or two studies for any period of time.

In the High School, the full course requires four years for its completion; but scholars may, if they choose, spend five or six years in completing it, or they may make a selection of one or more studies, and pursue them exclusively. There is no compulsion whatever; neither are there any prizes offered, nor any undue stimulus, to call forth too vigorous efforts. Accuracy and thoroughness in whatever is studied, with frequent application of the principles to the duties and affairs of

life, is all that is imperatively demanded. Pupils can even join any class in the High School at any time and for any period, when they are fully qualified to do the work of the class in a satisfactory manner. Scholars finishing the entire course with a high standard of scholarship receive a diploma when they graduate. Others may receive a certificate showing how long they have been connected with the school, and what they have accomplished.

If there has been any overwork, where does the responsibility rest,—on the schools, or on the scholars and their ambitious friends? It is the imperative duty of teachers, and I know that it is often conscientiously performed, to check by judicious advice the too earnest efforts of pupils whenever they notice any diminution of physical vigor. They also have frequent interviews with parents, not only in regard to the health of their children, but also in regard to the proper studies to pursue.

The impaired health that is so often referred to may, I think, be traced mainly to other causes than the hard study in school. Pupils who spend hours every day in sensational reading, or in attendance on exciting amusements; who are careless in regard to the kind of nutritive food, and who do not give a calm repose to their brain of eight or nine hours a day, — are totally unfit for school-work.

There may be in some instances an attempt to accomplish too much in a given time, and to neglect a thorough review of the earlier studies, and the application of their principles to the common affairs and business of life. When this exists, a correction should be made at once. The value of knowledge depends upon the use that can be made of it.

It must, however, be admitted that in some of our schools children are compelled to breathe air that is very deleterious and unfit for human lungs, or to be subject to cold draughts, that often cause serious sickness. This subject has been so often discussed, and its vital importance so often stated, that it is needless to dwell upon it at this time.

The number of pupils registered the past term is nearly the same as the previous term. Very many have been detained on account of sickness. The measles and diphtheria continue to be unusually prevalent in all sections of the city. The inability of parents to furnish their children with suitable clothing has also been one prominent cause of keeping very many from school. A few humane friends to the poor have contributed liberally in making provision for a hundred or more who would otherwise have been wandering in the street or confined at home. Notwithstanding these benevolent efforts, there are yet very many out of school who might be returned if they had proper clothing.

Truancy and absenteeism, which is wholly unnecessary, are largely on the increase. Our schools have never suffered so much from these causes as during the past term. In almost every section of the city, boys from seven to fourteen years of age and upwards, may be seen prowling in the streets and enticing others from school. The discipline of our schools, especially of our Intermediate, has been very seriously affected by these idle vagrants. This serious evil has been so often referred to in previous reports that it seems hardly necessary to allude to it again. The danger from this cause to our schools, to our social institutions, is certainly

threatening and alarming. At the present rate of increase of this ignorant and vicious element, a few years hence it will be rampant if not controlling in our city.

The whole number of pupils admitted the past term is 11,745. In the High School there have been admitted 424; in the eleven Grammar Schools, 3,686; in thirty-four Intermediate Schools, 3,014; and in thirty-nine Primary Schools, 4,617.

All which is respectfully submitted.

DANIEL LEACH,

*Superintendent of Schools.*

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PROVIDENCE, June 28, 1878.

*To the School Committee of the City of Providence:*

GENTLEMEN, — During the past short term there have been no changes in the character or condition of our schools that require any special attention of the Committee.

The faithful labors of the teachers in most cases have been crowned with the usual success. The examinations for promotion to the High School have never been more satisfactory. While the questions that have been submitted have been more difficult than in previous years, the percentage of correct answers has never been greater. The examinations of the Intermediate and Primary Schools have, with few exceptions, been entirely satisfactory. There has been in many schools a marked improvement in the method of imparting instruction.

Much more time than formerly has been given to oral and object teaching, with the most encouraging results. The perceptive powers of the pupils have been quickened and a new interest has been awakened in their studies. Every faithful and earnest teacher will continue to make this method prominent in all his teaching. There has been also a marked improvement in the methods of teaching in the High and Grammar Schools. Teachers are confined less to text-books and teach more general principles and subjects, omitting useless dates and details, which burden the memory without profit. Special attention has also been given to the application of the various branches taught to the forms of business and the duties of life, that their greatest practical value may be fully realized.

From the depression of business and other causes a very large number of changes in our school districts have taken place during the past year, so that these districts must be considerably modified to equalize, as far as possible, the number of pupils to each teacher.

From the frequent changes of the residences of pupils in the various districts, there is no more difficult task in the supervision of schools than so to adjust them from time to time that the best interests of the schools may be promoted, and parents and children accommodated, as far as possible. As the schools are emphatically for the parents, their accommodation and convenience ought not to be entirely overlooked. But as the location of school-houses cannot be easily changed, some hardship and inconvenience must be expected. When changes in districts are desired, they should be made, as far as practicable, at the beginning of the

school year. They cannot often be made at other times without seriously deranging the several grades and classes.

In the examination for the High School more than two hundred pupils have been found to be fully qualified to enter. Nearly or quite four hundred will be promoted from the Intermediate to the Grammar Schools, and over five hundred will probably enter the several Primary Schools. Last year there was an increase of more than eight hundred pupils to our schools in the fall term.

The whole number of pupils admitted the past term into thirty-nine Primary Schools was 5,061, an average of more than fifty to a teacher. The number admitted into thirty-six Intermediate Schools is 2,965, an average of more than forty to a teacher. In the eleven Grammar Schools, with 91 teachers, there have been received 3,423 pupils, an average of nearly forty pupils to a teacher, omitting the principals who have the supervision of all the rooms. To have made, during the term, the changes necessary to increase the number of pupils to a teacher, would have seriously interfered with the existing grades and classes.

With the promotion of four hundred or more from the Intermediate to the Grammar Schools, and with such additions as usually come from other sources, there will be, unless unforeseen and unusual circumstances prevent, without any other changes than those now proposed, at the beginning of the next school year, an average to a teacher of nearly or quite fifty pupils.

In the High School, at the beginning of the school year, 500 pupils were admitted with 15 teachers, an average of 33 to a teacher. As classes are formed in the

High School but once a year, no changes can be made in the classes. The largest number of pupils that can be thoroughly and successfully taught by one teacher is thirty. A smaller number than this would add very much to the efficiency of the school. This is the unanimous opinion of all who are familiar with High School work.

In making a correct estimate of the number of pupils that should be assigned to one teacher, some propose that we should take the average number in attendance and not the whole number. This is a mistake; as every experienced teacher knows that when classes are once formed and the lessons assigned, the absence of pupils for any cause whatever increases his labors, often requiring him to repeat the instructions given in their absence.

All of which is respectfully submitted.

DANIEL LEACH,

*Superintendent of Public Schools.*



## REPORT ON EVENING SCHOOLS.

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*To the School Committee of the City of Providence :*

The Standing Committee on Evening Schools submit this their report for the year 1877-8.

Early in September your committee met, and after due consideration, and under advice of the Superintendent, voted to open for the ensuing fall and winter nine ordinary schools, instead of eight, as last year; and one higher school,—to which, in deference to long usage, they reluctantly gave the pretentious name “Polytechnic School,”—to consist of two departments, to wit, a drawing department, for instruction in free-hand, mechanical, and architectural drawing; and a department for pupils more advanced than those who attend the ordinary schools, for instruction in mathematics and other English branches. They also selected with great care 133 teachers, most of whom had had experience in evening-school teaching; who were, upon recommendation of the committee in pursuance of the by-laws, subsequently appointed by the Committee on Qualifications. The schools so voted were located as follows: the ordinary schools,—in the old school-house near the junction of Smith and Orms streets; in the West River street

school-house; in the Meeting street school-house; in Pioneer Hall, South Main street; in the Elm street school-house; in rooms under lease to the city, at the corner of Potter's avenue and Ocean street; in Harrison street chapel; in Winsor's Hall, Olneyville; and in America street chapel. The Polytechnic School,— the English or scientific department in the Richmond street school-house, and the drawing department in the upper part of the Elm street school-house. The schools so voted and located by the committee were; on application to the City Council, subsequently formally adopted and established as the schools of the city.

The new school was started to meet a want long felt for the accommodation of scholars residing on Smith's Hill and in the adjacent portions of the Tenth Ward; and the result fully justified the expenditure incurred. The whole number of scholars enrolled was 146, and the average attendance 85; while the attendance at the other schools was much larger than last year.

The several schools were opened on the evening of Oct. 16, and closed on the evening of Feb. 22, making a term of twenty weeks. The whole number of pupils registered in the ordinary schools was 2,384, and in the polytechnic school 309,— making a total of 2,693. Of the pupils in the latter school, 229 were in the drawing department, and 80 in the other department. The total average attendance during the term was 1,302, distributed as follows, viz. 1,165 in the ordinary schools; 98 in the drawing department of the polytechnic school, and 39 in the other department. The amount expended for salaries of teachers and janitors was \$14,936.50, thus making the cost per pupil by registry \$5.54+, or by average attend-

ance \$11.47+. The total expenditure for salaries was \$2,568.60 larger than that of last year. This increase is chargeable in part to the establishment and maintenance of the new school in the Tenth Ward, and in part to the large increase in the number of scholars in the other schools, which called for a correspondingly larger force of teachers.

Attention is called to the annexed tabulated statement of the comparative enrollment, attendance, and cost of the evening schools during the six years last past. From this statement it will be seen that the enrollment and average attendance were much larger this year than in any of the other years given, and that the cost per pupil by average attendance was less than in any of them except two, when the percentage of the average attendance was correspondingly less.

Prior to 1872, the average cost of the evening schools per pupil was smaller than in the years covered by the table; and from this fact it has become fashionable, in this era of economy, to charge extravagance to their management. To this charge your committee reply by pointing to the better condition and the better results obtained during the period covered by the table, as unerringly indicated by the larger interest shown, the larger numbers enrolled, and the still larger increase in the average attendance. If the cost per pupil in former years was less, the average attendance and therefore the good wrought was correspondingly less. The increase in cost since 1872 is chiefly the result of the employment of a larger number of teachers, and of the assignment to them of a smaller number of scholars. The observation and experience of your committee confirm what

has been over and over again reiterated by their predecessors in this department, to wit, that the fewer the pupils a teacher has to instruct, the greater interest will he awaken and the greater regularity of attendance will be secure; and that no teacher can, with success any-wise proportionate to the outlay, hold the attention of and instruct more than twenty of the class of scholars of which our evening schools are made up.

The reasons are obvious. Evening schools, in our city at least, are entirely unlike day schools. They cannot be made to rank with them, and cannot be conducted on the same basis. They are fewer in number and more widely separate. They are not composed of the same class of pupils. The age of the pupils runs all along between twelve years and forty,—many of the oldest being less advanced than the youngest, and coming to school to learn the simplest rudiments of the language. With few exceptions, the children are poor, and are either compelled to work through the day for a livelihood, or, unable to dress as children in the day schools generally do, they shrink from attending them. Scholars in the day schools make study their daily work, coming to it fresh every morning; while those of the evening schools, in the vast majority of cases, come to their studies after ten or twelve hours of exhausting toil and confinement in the workshop or mill, and are often too tired for further confinement, or are so tired as to yield too readily the desire for mental improvement to the desire for physical rest, or to seek relief and recreation on the street, where, under cover of night, they are exposed to every form of temptation. From these and other causes naturally comes the great irregularity in attend-

ance peculiar to evening schools, and any considerable classification becomes impossible. But these schools are designed for these very classes, and for the purpose of making them better citizens ; and the great problem to be solved is, How can this great irregularity in attendance be lessened or overcome, and the large expenditure for the support of the schools be justified ? Your committee know no other way than by making the schools more attractive and interesting, and a really perceptible source of instruction to those whom they seek to benefit. But how can they be made attractive or interesting or instructive, unless they are given teachers enough, within the short session of two hours, to hear the scholars read and spell, teach them to write, and explain the simple but to them puzzling examples in the elements of arithmetic ?

Experience has fixed the limit of two hours to the school session, and no inconsiderable part of this time is required for securing order, for singing, and for other general exercises. But within the balance of the session, or even during the entire session, how very little personal attention can a teacher spare to each of forty, thirty, twenty, or even ten scholars for his three or four studies ? In our primary and intermediate Schools, which are so systematically graded, and in which the same studies are pursued as in our evening schools, it is conceded that forty-five or fifty scholars are all a teacher can successfully instruct ; but to these forty-five or fifty are devoted six hours a day, and these six hours are deemed necessary to successful instruction. How much less work can be done in the same time in the evening schools, and how much more time is required to interest and instruct the ungraded and ungradable pupils for whose benefit we claim to have established them !

Another reason why individual instruction is more needed in the evening than in the day schools is to be found in the character of the places in which they are held. In some cases they are required to be held in one room, and in other cases, in two or more large rooms, which are often so crowded as to make gradation, if possible, of very little account, since in the din of the work not more than one or two classes can recite without such confusion as to make study impossible.

It is for these causes, springing from the very nature of such schools, and for the purpose of securing and holding the attention of the scholars, and so making them personally interested in the work and attached to the schools, that during the last few years the number of scholars to the teacher has been reduced; and your committee are confident that it is to this reduction more than to all other causes combined, that we are indebted for the greater success of those years.

The extraordinarily large average attendance in all the schools, as compared with the average attendance in former years, and with that of like schools in most other cities, affords the highest proof of the success of this winter's work, and the best testimonial to the general efficiency and faithfulness of the teachers. Your committee, however, cannot close their report without special mention of the advantages offered, and of the success and marked improvement made, in both departments of the Polytechnic School. In the management of this school it was the aim of the committee to avoid all cause for unfriendly criticism such as theretofore made upon the studies pursued, to reduce their number, to adapt them to the needs of poor young men and young

ladies, and especially of mechanics and apprentices, and to give them the means of attaining greater excellence in their callings. Large numbers availed themselves of the opportunities offered; and the punctuality and regularity of their attendance, and their zeal, unflagging to the end of the term, particularly in the drawing department which was under the efficient principalship of Mr. Clifton A. Hall, were followed by results in steady and marked improvement, which were no less gratifying to the committee than they must have been flattering to the teachers and pupils, and cannot fail to raise the standard of our home architecture and mechanical arts. In the other department, under the charge of Mr. John B. Peck, who for several winters past has been the able head of the department, like gratifying improvement and results were manifest; and so great was the interest awakened that a very large proportion of the pupils, reciprocating the zeal of their principal, who volunteered his services without pay, continued their work, in the same place, more than ten months after the close of the term. The entire expenditure for salaries at the Polytechnic School was \$1,468.00.

Early in the term the attention of your committee was called to the fact that the ordinances of the city required that evening schools, no less than day schools, should be established by the City Council; and that neither the Committee on Evening Schools nor the General Committee had the power, theretofore exercised without question, to establish schools independently of the City Council. Your committee, therefore, forthwith applied to the City Council for a ratification of their action in establishing the schools then in operation; and

the schools so established were thereupon formally adopted as the schools of the city.

Your committee recommend that application be made to the City Council for the establishment of the same number of schools in or near the same localities for the coming fall and winter as on the last, to wit, nine ordinary schools and one higher or polytechnic school.

All which is respectfully submitted for the Committee.

E. C. MOWRY, *Chairman*,  
SHUBAEL S. PARKER,  
HENRY A. HOWLAND,  
HUGH BROADLEY,  
GILBERT E. WHITTEMORE,  
JOHN W. CASE,  
FREEBORN COGGESHALL,

*Committee on Evening Schools.*



TABLES ACCOMPANYING REPORT OF COMMITTEE ON EVENING  
SCHOOLS FOR THE YEAR 1877-8.

| SCHOOL.              | PRINCIPALS.         | No. REGISTERED. |        |        |          | No. of teachers including principal at commencement. | No. of teachers retained including principal. |
|----------------------|---------------------|-----------------|--------|--------|----------|--|---|
|                      |                     | Boys.           | Girls. | Total. | Average. |  |   |
| Olneyville.....      | C. H. Johnson....   | 334             | 92     | 426    | 193      | 17   | 17  |
| America Street.....  | H. C. Pierce.....   | 332             | 166    | 498    | 189      | 17   | 17  |
| Meeting Street.....  | R. B. Comstock...   | 196             | 60     | 256    | 141      | 15   | 12  |
| Elm Street.....      | D. S. Baker, Jr.... | 181             | 106    | 287    | 136      | 15   | 13  |
| Pioneer Hall.....    | H. S. Babcock.....  | 150             | 60     | 210    | 125      | 13   | 13  |
| Harrison Street....  | Geo. F. Weston...   | 148             | 65     | 213    | 121      | 15   | 13  |
| West River Street..  | Irving Champlain.   | 161             | 47     | 208    | 113      | 11   | 10  |
| Orms Street.....     | F. N. Bliss.....    | 106             | 40     | 146    | 85       | 11   | 9   |
| Ocean Street.....    | I. O. Winslow.....  | 110             | 30     | 140    | 62       | 10   | 7   |
| Total.....           |                     | 1,718           | 666    | 2,384  | 1,165    | 124  | 111   |
| POLYTECH. SCHOOL.    |                     |                 |        |        |          |  |   |
| Scientific Dep't.... | J. B. Peck.....     | 80              |        | 80     | 39       | 4  | 2   |
| Drawing Dep't....    | C. A. Hall.....     | 229             |        | 229    | 98       | 5  | 5   |
| Grand total.....     |                     | 2,027           | 666    | 2,693  | 1,302    | 133  | 118   |

| Year.   | Total Enrollment. | Average Attendance. | Per Cent. | Sum expended for Salaries. | Cost p. scholar according to average. | Cost p. scholar according to registry. |
|---------|-------------------|---------------------|-----------|----------------------------|---------------------------------------|--|
| 1872-73 | 2,566             | 900                 | 35        | \$9,454 50                 | \$10 55                               | \$3 68                                 |
| 1873-74 | 2,074             | 835                 | 40        | 9,682 45                   | 11 59                                 | 4 66                                   |
| 1874-75 | 2,228             | 993                 | 44        | 10,024 50                  | 10 09                                 | 4 54                                   |
| 1875-76 | 2,110             | 970                 | 45        | 11,959 50                  | 12 30                                 | 5 66                                   |
| 1876-77 | 2,351             | 1,040               | 44        | 12,367 90                  | 11 89                                 | 5 26                                   |
| 1877-78 | 2,693             | 1,302               | 49+       | 14,936 50                  | 11 49+                                | 5 54+                                  |



## REPORT ON VACATION SCHOOLS.

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*To the School Committee of the City of Providence :*

The committee on Vacation Schools respectfully report, that with the assistance of the Superintendent of Public Schools, they opened eight vacation schools July 16, in the following locations, viz. Benefit street, Arnold street, Martin street, Federal street, Ring street, Hammond street, Beacon street, and Ocean street. The schools were kept open six weeks.

Whole number of pupils entered was 1,037, with a daily attendance of from six to seven hundred.

There can be no doubt but that the appropriation for this work, which the City Council has ever readily granted, has this year, as usual, been wisely expended.

The length of the schools was, as usual, six weeks ; which gave those of the scholars who attend our regular public schools three weeks of the long vacation in which to enjoy perfect rest from books.

One of the disadvantages which these schools have had to contend with, not only this year but in the past, has been that, holding their sessions in the regular school-buildings, during the long vacation they have been much interrupted by the repairing and refitting which it is customary to make at this time.

This year the repairing was more than usually extensive at two of our schools, and both teachers and

scholars were seriously interrupted for half of the session.

As attendance on these schools has always been regarded on the part of both parents and scholars as optional, the attendance has been more or less irregular ; but the average this year compares favorably with that of other years, and even with these drawbacks, the good they accomplish from year to year, upon that portion of the rising generation which but for them would be thrown uncared for amid the manifold temptations of the streets, is of incalculable benefit.

W. HOWARD KING, *Chairman.*

EMULUS RHODES.

C. F. PHILLIPS.

H. S. OLNEY.

E. D. BASSETT.

S. S. SWEET.

JAMES GOFF.

## REPORT ON HEALTH AND VENTILATION.

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*Gentlemen of the School Committee :*

The committee on Health and Ventilation, to whom was referred the report of the committee on school hygiene of the Providence Medical Association, report, that they have examined the same, and find it contains much valuable matter ; and while some of the suggestions made therein may be right in the abstract, they would be impracticable in our public schools as they are now constituted.

The report criticises at considerable length the physical condition of the children, particularly those in the primary schools ; that most of them are suffering from too close confinement, too many together in one room, and the vitiated air caused by bad ventilation.

To remedy some of the evils complained of, the report states, that children love music and the dramatic arts ; these should enter into their physical exercises and be practised every school session ; this would add to the attractiveness of the schools, and inure to their benefit and welfare.

There is much in the report that has heretofore been brought to your notice, and need not be repeated ; but the committee recommend that the document be read in general committee.

The report of the Fourth District committee, asking that ventilating apparatus be fixed in the Beacon street school-house, which was also referred to your committee, has received due attention. The committee have examined the building, and have no hesitation in stating that ventilating apparatus should be provided at once.

The committee feel it to be their duty to enter their protest against the practice of placing so many primary scholars together in the same room, particularly where an insufficient number of seats have been provided for their accommodation. For instance, there were entered the last term in the Warren street primary, both rooms, 168 scholars, with seats for 120; in the Friendship street, 2d room, 83 scholars, with seats for 60; in the Public street, 2d room, 83 scholars, with seats for 60; in the Ring street, 2d room, 84 scholars, with seats for 72; in the Federal street, 2d room, 106 scholars, with seats for 96; in the Carpenter street, 2d room, 76 scholars, with seats for 60, — making an aggregate in the above-named six schools of 600 scholars, with seats for only 468. Where so many children are crowded together, with imperfect ventilation, the effect upon their health cannot be otherwise than disastrous. There are other schools in a similar condition, but the above will suffice.

The subject of ventilation has been so often referred to, and the baneful effects of vitiated air upon the health of the scholars and teachers so frequently set forth, that any allusion to it at this time might be deemed superfluous; but we are all aware that the air in the school-room should be changed frequently. This can be done by opening the doors and windows; and if in connection therewith physical exercises are performed,

the practice would be beneficial to the scholars, and they would not be likely to take cold from the sudden change of the atmosphere.

It is presumed that every member of the school committee is fully aware that the perceptive faculties of the young child are relatively stronger than when they are older ; that every object that comes within the scope of their vision is indelibly impressed upon their memory ; and in a short time, reflection is called into action, which results in the development of thought, form, motion, and ideas ; the faculties are unfolded and brought into practice, and the powers of the mind developed naturally ; and whatever tends to improve and educate the young mind should be adopted.

Color first attracts the attention of the child ; after that, form. The committee are of the opinion that a systematic introduction of these studies into the primary schools would be of great benefit to the pupils, besides adding greatly to the attractiveness of the schools.

Pure water has been introduced into the city, and our citizens are enjoying the blessings flowing therefrom. Now let the children in the schools have the benefit of pure air. Appeal after appeal has been made to this effect, and the result can only be likened unto that of the dog barking at the moon.

The School Committee have done all that lies in their power to do in the matter ; and the responsibility, and a great one it is, must rest where it belongs.

The City Council should see to it, that all the school-houses are properly ventilated, or authorize the School Committee to do it, and it will be attended to.

That the above recommendations may be carried into effect, the committee present the accompanying resolutions and recommend the passage of the same.

Respectfully submitted.

H. H. BURRINGTON, *Chairman.*

*Resolved*, That the Executive Committee be, and they are hereby requested to have ventilating apparatus put into the Beacon street school-house, similar to that in the East street school-house, during the present vacation.

*Resolved*, That the superintendent be, and he is hereby requested to introduce physical exercises into the schools, in connection with opening the doors and windows, for ventilation, from five to ten minutes each school session. Also to introduce into the Primary Schools the study of color and form.

*Resolved*, That the Secretary be, and he is hereby requested to petition the city council for an appropriation of — dollars for the purpose of providing ventilating apparatus for all the school-houses that are not properly ventilated, the same to be expended in such manner as the city council may deem best.



# WRITTEN EXAMINATIONS.

## HIGH SCHOOL. CLASSICAL DEPARTMENT.

### EXAMINATIONS IN GREEK.

#### HARKNESS'S FIRST GREEK BOOK.

1. Fable 1. What form of conditional sentence?
2. " " Parse *ἄν*.
3. " " Parse *εἰ*.
4. " 2. Construction of *λίχου*?
5. " " Parse *καί*.
6. " " Parse *ὅτι*.
7. " " Subject of *ἐστί*?
8. " 3. Construction of *εὐθαλῆ*?
9. " " Account for number of *ἐστί*.
10. " " Account for accent of *μητρικά*.
11. " 4. Parse *ὥς*.
12. " " Parse *εἰ*.
13. " 5. Construction of *ἐαυτόν*?
14. " " *ἡξίου*, where made?
15. " " Parse *εἰ*.
16. " 6. Construction of *ὀνηλάτην*?
17. " " Construction of *αὐτόν*?
18. " 7. Force of *αὐτός*?
19. " 8. *ἐβόα*, where made?

20. Fable 8. *τεθνήξῃ*, where made?
21. " 9. Construction of *ώρα*?
22. " " Synopsis of *συνήγες*?
23. " " Inflect *συνήγες*.
24. " 14. Write the next case of *λέων*, *θήρας*, *μερίδας*, *συμφορά*.
25. §§ 502-504. Fut. of *περιέφερεν*, *θέλων*, *μαθών*, *ξῆ*?
- 26-50. Translate §§ 506-512.

#### XENOPHON'S ANABASIS, BOOK II., CHAP. IV.

1. § 15. *Ποῦ ἂν ἴδου*, change to direct.
2. § 15. *Ταῦτα*, construction?
3. § 16. *Αὐτός εἰμι ὃν ζητεῖς*, change to indirect.
4. § 16. Write enough to show every change of accent from transposing *αὐτός* and *εἰμι*.
5. § 16. *Ἐπιθωνται*, account for mood.
6. § 16. *Ἐπιθωνται*, synopsis?
7. § 16. *Νυκτός*, account for case.
8. § 16. *Ἔστι*, two reasons for accent?
9. § 16. *Στράτευμα*, stem, derivation, derivative ending?
10. § 16. *Πλησίον*, parse.
11. § 17. *Γέφυραν*, voc. sing. and dual, gen. sing. and pl.?
12. § 17. *Πέμψαι* could be found where else?
13. § 17. *Δύνηται*, account for mood.
14. § 19. *Ἀπόλουθα*, parse.
15. § 19. *Εἶη*, account for mood.
- 16-25. Translate §§ 16-19, *ἐὰν μὲν οὖν*.

#### XENOPHON'S ANABASIS, BOOK V., CHAP. VIII.

- 1-6. Translate §§ 14, 15, 16.
7. § 14. Write enough to show every change of accent occasioned by putting *ποτέ* after *ἀναμένων*.
8. § 15. Reason for mood of *ἴδοιμι*?

9. § 15. Construction of *ὑπουργον*?
10. § 15. *ἄπερ*, antecedent and construction?
11. § 16. *ἡμᾶς τοὺς ὀπισθεν*, explain connection between place and person.
12. § 16. Reason for mood of *παίσιτο*?
13. § 17. Translate *παρὰ τὸ δίκαιον*, and explain meaning of *παρά*.
14. § 17. Explain tense of *ἔπαθον* and *ἡξίουν*.
15. § 17. Construction *δτου*; what other form?
16. § 18. Construction *υιοῖς*?
17. § 19. *πλείω* where made; what other form?
18. § 19. Principal parts *πίνω*?
19. § 20. Account for mood of *ῆ*.
20. § 20. *θάλαττα*, gen. sing., nom. dual., nom. and gen. pl.?
21. § 24. Explain mood of *σωφρονῆτε*.
22. § 24. *ἀφιᾶσι*, inflect tense.
23. § 25. *μέμνηται*, synopsis of this system?
24. § 25. *ἐπῆνεσα*, principal parts of simple verb?
25. § 26. Compare *ἡδίων*.

## HOMER'S ILIAD, BOOK II.

1. Line 289. Attic prose for *ὦς τε*?
2. Line 292. Attic prose for *ἦς*?
3. Line 293. Attic prose for *ἀσχαλάα*?
4. Line 296. Attic prose for *μιμνόντεσσι*?
5. Line 297. Attic prose for *ἀσχαλάαν*?
6. Line 297. Attic prose for *νηυσί*?
7. Line 301. Attic prose for *ἴδμεν*?
8. Line 302. Attic prose for *ἔβαν*?
9. Line 302. Attic prose for *θανάτοιο*?
10. Line 307. Attic prose for *ῥέεν*?
11. Line 311. Attic prose for *ἔσαν*?
12. Line 319. Attic prose for *μίν*?

13. Line 320. Attic prose for *ἑσταότες*?
14. Line 291. Construction of *ἦ*?
15. Line 291. Construction of *πόνος*?
16. Line 292. Construction of *μῆνα*?
17. Line 294. Reason for mood of *εἰλέωσιν*?
18. Line 294. Peculiarity in construction of *εἰλέωσιν*?
19. Line 299. Reason for mood of *δαῶμεν*?
20. Line 300. Reason for mood of *μαντεύεται*?
21. Line 301. Antecedent of *τούδε*?
22. Line 314. Construction of *ἐλεεινά*?
23. Line 316. Construction of *πτέρυγος*?
24. Line 317. Construction of *κατά*?
25. Line 319. Construction of *λᾶαν*?
26. Line 292. Explain *ο'*?
27. Line 299. *δαῶμεν*, where made?
28. Line 299. *δαῶμεν*, literal meaning?
29. Line 306. *ἔρδομεν*, literal meaning?
30. Line 307. *ἔθεν*, explain formation.
31. Line 309. *ἦκε*, principal parts?
32. Line 318. *ἔφηγεν*, explain formation.
- 33-50. Translate lines 311-320.

## GREEK COMPOSITION.

## I.

1. I said that I was at a loss what to do. 2. He said that if they should do this they would prosper. 3. How much do you think these slaves would bring, if sold? 4. He could not any longer deceive any one or injure any one. 5. I shall be slow to do this unless I am bidden by you. 6. The task of serving the state must not be shunned by us. 7. He says that every citizen should serve the state whenever there is occasion. 8. If we had done this, no one would go away. 9. Whoever benefits his friends will be admired. 10. They went into the city so as not to see that battle.

## II.

1. I shall not go away, unless the citizens so direct. 2. He said that he did not know what to do. 3. Do not steal this nor be pursuing what is disgraceful. 4. He went away so as not to see the battle. 5. Let no one say that that is the road, and thus deceive his friend. 6. If no one were to serve the state, no one would prosper. 7. Whenever nothing is said, no one is any longer deceived in any respect. 8. Since this road does not lead to that city, I shall not go away. 9. I asked the judge whether he wished to see me. 10. I ask you why you do not hear what I say.

## EXAMINATIONS IN LATIN.

## CAESAR'S GALLIC WAR, BOOK II.

1. Translate Chap. IV. through *sumerent*.
2. Translate Chap. XVII. from *Adjuvabat etiam*.
3. Principal parts *reperiebat*, *consedissee*, *deferebant*, *incisis*, *praeberent*?
4. Gender, with rule, of *fines*, *rem*, *rubis*, *sentibus*, *instar*?
5. Explain mood and tense of *sumerent*, Chap. IV., and *impedirent*, Chap. XVII.
6. Construction of *memoria*, Chap. IV., and of *instar*, Chap. XVII.?
7. Write Chap. IV., *Plerosque* — *prohibuerint*, in direct discourse.
8. What is the subject of *adjuvabat*, Chap. XVII.? Of what is *Nervii* the subject?
9. Composition of *possent*, *prohibuerint*, *incisis*, *praeberent*, *omittendum*?

10. If the subjunctive were used in place of *deferebant*, what would account for it, and what different meaning would be conveyed?

CICERO'S FOURTH ORATION AGAINST CATILINE, CHAPS. X. AND XI.  
(HARKNESS).

1. Line 11. Reason for mood of *sit*?
2. Line 11. Force of *ille*?
3. Line 12. What figure?
4. Line 12. Principal parts of *coactus est*?
5. Line 13. Meaning of *alter Africanus*?
6. Line 14. Locate *Numantia*.
7. Line 15. Explain *currum honestavit*.
8. Line 17. Construction of *gloria*?
9. Line 19. Construction of *quibus*?
10. Line 19. Gender of *quibus*, and why?
11. Line 22. Construction of *majus*?
12. Line 23. Reason for mood of *habeant*?
13. Line 23. Construction of *victores*?
14. Line 24. Reason for mood of *revertantur*?
15. Line 24. Peculiarity in *revertantur* as deponent?
16. Line 29. *Hostes*, case and why?
17. Line 31. Reason for mood of *possis*?
18. Line 31. Construction of *mihi*?
19. Line 32. Anteced. and construction of *id*?
20. Line 36. Principal parts of *confido*?
21. Line 4. Reason for mood of *sint*?
22. Line 14. Principal parts *saeptum esse*?
23. Line 18. *Conservaverit*, where made and why?
24. Line 21. Gen. and dat., both numbers, of *liberis*?
25. Line 24. Translate *Habetis — dubitet*.

## VIRGIL'S AENEID, BOOK VI.

1. Line 353. Parse *ne*.
2. Line 54. What determines the tense of *deficeret*? Could *deficiat* have been used, and if so, with what change in translation?
3. Line 356. Construction of *lumine*?
4. Line 63. Construction of *quod*?
5. Line 65. Construction of *malis*?
6. Line 66. What figure?
7. Line 66. Pertinence of this request?
8. Line 67. *Diva creatrix*, who?
9. Line 81. *Aeternum*, peculiarity in idiom?
10. Line 87. *Increpat*, principal parts?
11. Line 89. *Venias*, account for mood.
12. Line 92. *Euntem*, nom. and abl. sing., gen. pl.?
13. Line 89. Name of last foot? Where else in the line might it occur?
14. Line 89. Scan.
15. Translate lines 55-77.

## LATIN COMPOSITION.

## I.

1. I shall always wonder why philosophers disagree upon the most important subjects. 2. He did not say to me that the consul had had a prosperous voyage. 3. The Romans boasted of having conquered the enemy in many battles. 4. We are all born to achieve something worthy of men. 5. Without the aid of friends Cicero would never have suppressed the conspiracy. 6. Were the soldiers to know what has been done, they would rout the forces of the enemy. 7. Let the good be loved, but do not hate the bad. 8. The citizens said that it could not be denied that the city was defended by the gods. 9. Who is so cruel as to desire that this city be destroyed? 10. We have heard that all the soldiers of Orgetorix returned to the camp.

## II.

1. You and Balbus and I have waged many wars. 2. I answered that you and I were in good health. 3. He said that he had not lifted up his hands. 4. For your sake I will do this but not for my own. 5. Influenced by fear of the Romans they sent ambassadors to ask peace. 6. I shall go home, since I know that this city is safe. 7. Catiline fled from Rome because Cicero accused him. 8. The Romans praised Cicero because he freed the city from fear. 9. Cicero is said to have remained at Athens two years. 10. He wrote a book the same year that he died.

## III.

1. He said that he asked why I did this. 2. I said that when I should have read all the letters I would come. 3. Do not ask me why I feared the consul. 4. Why should we wish him to mention this book? 5. He thinks that these orations are worthy to be read by us. 6. It is asked whether he would have gone from the city unless he had been able to return. 7. There has been no doubt that they were able to renew the war. 8. It is the part of a general to wage war. 9. Will not the enemy be so terrified that they will flee? 10. Rome began to be a very powerful city many years ago.



## ENGLISH AND SCIENTIFIC DEPARTMENT.

### FIRST CLASS.

#### POLITICAL ECONOMY.

1. State the exact service which labor renders to production. Distinguish between productive, unproductive, and indirectly productive labor, with examples.
2. Define capital. What service does it render to production? What are the two kinds of capital, with examples?
3. What is socialism? What are its economic defects?
4. Define money, value, price, barter, and double standard of value.
5. What effect does the increased supply of money have upon its value and upon prices? What circumstances have caused the decrease in the value of gold and silver to be comparatively so slight since 1850?
6. What are the different systems of rent of land in use in Europe?
7. Define wages. State and illustrate Adam Smith's five causes which produce different wages in different employments.
8. In what two ways does a reduction of the rate of interest in any particular country tend to decrease the national capital?
9. What is meant by free trade, and what by protection? What are the arguments for each?
10. What is meant by the incidence of taxation? What is the difference between direct and indirect taxation? To what class does an income tax belong?

## ENGLISH LITERATURE.

1. What different races have occupied England, and what traces have they left in the language?
2. Describe "Beowulf."
3. Name the contemporaries of Chaucer and their works.
4. Who were the non-dramatic poets of the Elizabethan age, and what did they write? Describe one of their works.
5. Enumerate and classify Dryden's works, and describe one of them.
6. Name three great historians of the eighteenth century. What was the occupation of each, and what did each write?
7. Give an account of the life and works of Thomas Gray.
8. Describe the poems of Sir Walter Scott.
9. Give the author of each of the following works, and the department of literature in which it should be classed, arranging in the order of their dates, as nearly as possible: "The Rambler," "Confessions of an Opium Eater," "Merry Wives of Windsor," "Paraphrase of the Scriptures," "King's Quair," "The House of Fame," "The Task," "Areopagitica," "Christabel," and "The Deserted Village."
10. Give the same for each of the following: "The Excursion," "Aurora Leigh," "Childe Harold," "Woodstock," "The Old Curiosity Shop," "The Rape of the Lock," "Essay on the Human Understanding," "Complaint of Piers Ploughman," "Pamela," and "The Saint's Everlasting Rest."

## GEOLOGY.

1. Describe talc, serpentine, and allied minerals.
2. Classify and describe syenite, porphyry, oölyte, pudding-stone, and geode.
3. Define anticlinal, fault, jointed structure, and slaty cleavage. What is supposed to be the cause of the last two?

4. What is said of life in the Archæan time?
5. What rocks of known age are found in New England, and where are they found?
6. Give the classification of mollusks. What cephalopods have been found fossil, and in what ages, with brief descriptions?
7. What tertiary mammals have been found in America, with brief descriptions?
8. Describe each of the following, state the class to which it belongs, and the country and age in which it existed: trilobite, nummulite, moa, pentremite, and iguanodon.
9. What are cascades and cañons, and how are they produced?
10. How are icebergs formed, and what geological effects do they produce?

## STUDY OF WORDS.

Give the derivation, history, and present meaning of the following words:—

- |                |                 |
|----------------|-----------------|
| 1. Ambition.   | 9. July.        |
| 2. Alderman.   | 10. Lunacy.     |
| 3. Benevolent. | 11. Melancholy. |
| 4. Candidate.  | 12. Nostrum.    |
| 5. Crescent.   | 13. Prescience. |
| 6. Disaster.   | 14. Rival.      |
| 7. Farthing.   | 15. Shibboleth. |
| 8. Iconoclast. | 16. Utopian.    |
17. State the distinctions between *which* and *who*.
  18. Give the origin of the names of the days of the week.
  19. State the rule for doubling the final consonant of a primitive word; and give five examples illustrating different points under the rule.
  20. What is the meaning of the suffix *ish*? Apply it to red, black, white, blue, and boy, with rules for spelling.

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SECOND CLASS.

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## ASTRONOMY.

1. Define the meridian, the prime vertical, azimuth, declination, and celestial latitude.
2. State and explain two direct proofs of the earth's rotation on its axis.
3. How may the latitude of a place on the earth be found? Give two methods.
4. Explain aberration of light, and compute its amount.
5. Explain the librations of the moon.
6. What are the different kinds of eclipses of the sun, and what are their causes? How many eclipses of the sun may occur in one year?
7. What planets have satellites, and how many?
8. What are inferior planets? Give their approximate diameters and distances from the sun. Calculate the distance of one from the sun when its greatest elongation is  $27^{\circ}$ , and the earth is in perihelion.
9. What are periodic stars? What different theories have been proposed to account for them?
10. Describe the constellations Scorpio and Hercules.

## CHEMISTRY.

1. Describe five methods of making oxygen, with equations.
2. What is the effect of heat upon the solution of solids? Also of heat and pressure upon the solution of gases.
3. What are the distinctions between bases and acids? Explain two uses of the term base, and three uses of the term acid, with examples and formulas.
4. How is fluohydric acid made? with equation. For what is it used?

5. How is sulphuric acid made? State its relation to water and action upon organic substances. Calculate the number of pounds of the concentrated acid which contain 10 pounds of sulphur.

6. Give the empirical and graphic formulas of aqua fortis, Glauber salt, gypsum, copper nitrate, potassium nitrite, ferric sulphate, green vitriol, sal ammoniac, calcium hypochlorite, and sodium perchlorate.

7. What is the chemical composition of fats and oils? What is the nature of soap, and how is it made?

8. Describe spectrum analysis. What elements have been discovered by it?

9. Describe alums and isomorphism. Give formulas and uses of the alums.

10. Calculate the percentage of hydrogen, by weight, in dry ammonia gas, marsh gas, olefiant gas, concentrated vinegar, and saleratus, respectively. Give the volumetric composition and density of the gases named.

#### CONSTITUTION OF THE UNITED STATES.

1. Name the colonies which declared their independence in 1776. By what title were their lands held?

2. When did the Articles of Confederation go into effect, and how long did they continue in force? State some of the causes of the inefficiency of the Confederation.

3. Write and discuss Art. I., Sect. 3, Cl. 6. [Trial of impeachments.]

4. Write Art. I., Sect. 8, Cl. 5. [Coining money, etc.] Explain the metric system of weights.

5. State the subjects of the last five sections of the first article.

6. Write and discuss Art. II., Sect. 1, Cl. 7. [Salary of the President.]

7. In what cases does the Supreme Court of the United States have original jurisdiction, and in what appellate jurisdiction? What is the meaning of each expression?

8. Write Art. IV., Sect. 3, Cl. 1. [Admission of new States.]

9. Give the 13th and the 15th amendments.

10. What amendments have been proposed but not ratified? How many modes are there of proposing and how many of ratifying amendments? Which methods have always been employed?

#### HEAT AND ELECTRICITY.

1. Give the modern definition of heat. Also, define latent and specific heat, vaporization, and ebullition.

2. What is a thermal unit? How many thermal units are required to raise 30 lbs. of alcohol from  $0^{\circ}$  F to  $200^{\circ}$  F? [Consider latent heat of alcohol vapor, 375; boiling point,  $173^{\circ}$ ; specific heat of liquid alcohol, .51; vapor, .45.]

3. How many foot-pounds of work might be done by burning 100 lbs. of marsh gas, if the combustion of each pound produce 23,500 thermal units, and none of the heat were wasted?

4. Explain the culinary paradox.

5. What are athermancy and diathermancy? Give examples.

6. Describe any five improvements made by Watt in the steam engine.

7. Describe a magnetic battery. What substances are magnetic under ordinary circumstances?

8. Describe an electric battery. How does it differ from the charge by cascade?

9. Describe Daniell's galvanic battery, in full, with equations.

10. What are the essential parts of an electric telegraph? How does Wheatstone's principle differ from Morse's?

## FRENCH.

1. Express in French: It is warm. It is daylight. How is the weather? I have a dollar left. I long to see him. He longs to see me.

2. Express in French: English is spoken here. What do people say of this business? They say that the war is finished. How is that said in French?

3. Express in French: To whom are you speaking? Of what is your brother talking? My watch is worth a hundred dollars. That man is worth \$1,500.

4. Express in French: As I was walking in the park, I saw your brother. When I lived in Paris, I spoke French every day. My uncle went first to England, and then to Rome.

5. Give in full the present tense and the past definite of *faire*, the future of *pouvoir*, and the present subjunctive of *savoir*.

6. Give the present participle and past participle of the following verbs: *Paraître, mettre, lire, écrire, boire, courir, dire, dormir, mourir, naître, ouvrir, and voir*.

7. Express in French: That artist is going to sing this evening at the concert. I am to visit your friend to-morrow. I have not time to see you now. Translate into English: Je viens de rencontrer votre médecin.

8. Express in French: If you do not think of your business, you will not succeed in it. What do you think of this book? Can you do without money? I cannot do without it.

9. Translate from reading-book, page 11, first line to end of fourth scene.

10. Translate from the same, page 21, first line to end of twentieth line.

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THIRD CLASS.

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## NATURAL PHILOSOPHY.

1. Distinguish between universal and specific properties of matter, and illustrate. Explain expansibility, with experiment.
2. Describe capillary action and give practical illustrations.
3. Explain the compound lever, and give its statical law.
4. Disregarding friction, what power is required to draw 100 pounds up an inclined plane of the first kind, 10 feet long and 4 feet high, if there are employed two movable and two fixed pulleys, and a wheel and axle whose axle is 6 inches diameter and wheel 18 inches radius.
5. Explain the principle of the hydrostatic bellows, and state the method of estimating weights by them.
6. Prove that a floating solid displaces its own weight of the liquid.
7. Describe the specific gravity bulb, and describe the process of estimating the specific gravity of liquids by it.
8. Describe and explain the siphon fountain.
9. Name and illustrate the three conditions requisite for the sensation of sound.
10. State the laws of reflection of light, and explain the formation of images by plane mirrors, with figure.

## TRIGONOMETRY.

1. Find the value of  $\left( \frac{1349 \times .024}{783 \times .0006 \times 87.39} \right)^{\frac{3}{4}}$ .
2. In a right-angled triangle, the perpendicular equals 736.3, and the base 500. Find the other parts.
3. In the triangle ABC, B equals  $43^{\circ} 25'$ ; BC, 235; AC, 161.52. Find the other parts.



4. In the triangle ABC, AB equals 304; BC, 280.3; B,  $100^\circ$ . Find the angles A and C.
5. Define the terms: plane trigonometry, analytical trigonometry, origin of arcs, secondary diameter, supplement of an arc.
6. Prove that the mantissa of the logarithm of a number does not depend upon the position of the decimal point in that number.
7. Define cosine, tangent, co-versed-sine, cotangent, and cosecant.
8. Given in a right-angled triangle, to find the other parts: (1) hypotenuse and angle at the base; (2) base and angle at the base.
9. State and demonstrate the method of solution of oblique-angled triangles, when three sides are given.
10. Give the algebraic signs and the limiting values of all the trigonometrical functions in the second quadrant.

## GEOMETRY.

1. Define the terms: theorem, axiom, regular polygon, frustum of a pyramid, and spherical segment.
2. Prove Prop. XIII., Book I. In any triangle, the greater side lies where?
3. Prove Prop. XXX., Book I. Given a quadrilateral having two sides equal and parallel.
4. Given the proportion  $A : B :: C : D$ . Write this proportion by inversion, alternation, composition, and division.
5. Prove Prop. XX., Book III. The measure of an angle formed by two secants meeting without the circle.
6. Prove Prop. XXV., Book IV. Similar triangles are proportional to what?
7. Prove Prop. VII., Book VI. One of two parallels is perpendicular to a plane.

8. Prove Prop. XIX., Book VII. Similar triangular prisms are proportional to what?

9. Find the altitude of a frustum of a cone whose volume is 65.9736 cubic feet, and the diameter of whose bases are 2 and 4 feet, respectively.

10. Find the volume and surface of a sphere whose diameter is four metres.

#### RHETORIC.

1. Define a barbarism. What is meant by precision, and by what means may it be attained? Distinguish between *lucid* and *luminous*.

2. Define a balanced sentence. State its use, giving two examples.

3. Define clearness. In what ways may it be violated? Correct the following sentence, and state what rule it violates: "I never expect to see Europe."

4. In what ways may strength be promoted?

5. In what respect do metaphor and antithesis resemble each other, and in what respects do they differ?

6. Name the figures in each of the following sentences: —

"Thought in the mine may come forth gold or dross;

When coin'd in words we know its real worth."

"The mountains saw thee, and they trembled."

"Presence of mind is greatly promoted by absence of body."

7. State the requisites for sublimity in writing.

8. What kinds of verse in the following examples: —

"Straight mine eye hath caught new pleasures

Whilst the landscape round it measures."

"At the close of the day when the hamlet is still."

Name kinds of rhyme in the first example.

Define long metre, common metre, and short metre.

9. Define poetry, and give the conditions of epic poetry.

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10. Name ten varieties of prose composition.

State and explain the points in the *form* of a letter requiring special attention.

FRENCH.

1. What are the sounds of *ai*, *ou*, *eu*, *j*, and *th* in French? Represent by sounds in English words.

2. Express in French: Have you bought any bread to-day? Have you had any good coffee? He does not wish any paper now. Why are you not in the garden with the children? Have you ever seen the general's house?

3. Explain the use of *je*, *me*, and *moi*, with an example of each.

4. What are the general rules for the formation of the feminine of adjectives ending in *x*, *f*, *e* mute, *er*, and *et*? Give an example of each.

5. Express in English: Le fermier a-t-il du foin? Il en a beaucoup. La blanchisseuse a-t-elle apporté le linge? Pas encore, Monsieur. Pourquoi ne l'a-t-elle pas apporté?

6. What classes of verbs are conjugated with *être*? What are the rules for the gender and number of the past participle in each class? Give examples of each.

7. Conjugate the present tense of *boire*, the future of *vouloir*, the imperative of *savoir*, the past definite of *dire*, and the imperfect subjunctive of *envoyer*.

8. Give the principal parts of the four model regular verbs also of *aller*.

9. Express in French: If you don't have what you need, tell it to your father. It snows every day this winter. If you send me my trunks, don't send them to me by the railroad. Would you go away if you could remain longer? You have made a mistake in saying that.

10. Express in English: On vous a vu au bal; donc vous n'étiez pas malade. Nous serions partis depuis long temps si nous

avons eu l'argent nécessaire. Allez vite chez M. Armand et dites-lui de venir toute de suite. Vous lui porterez cette lettre et vous lui direz qu'il me faut une réponse. Si vous voulez trouver le capitaine, il faudrait aller de bonne heure chez lui.

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#### FOURTH CLASS.

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##### ALGEBRA.

1. Define (1) similar terms; (2) similar radicals; (3) a quadratic equation; (4) an affected quadratic equation. Also, give signification of a negative fractional exponent, with example.

2. From  $4c - \frac{a}{a-3}$  take  $2c - \frac{a+3}{a}$ .

3. Divide  $\frac{a^3}{b-c} - \frac{a^2}{b+c}$  by  $\frac{c}{b^2-c^2} - \frac{c}{b^2+c^2}$ .

4. From  $\sqrt{2a^2 + 4a^2b + 2ab^2}$  take  $\sqrt{2a^2 - 4a^2b + 2ab^2}$ .

5. Given the equation  $a + x = \sqrt{a^2 + x} \sqrt{b^2 + x^2}$ , to find  $x$ .

6. From one end of a line I cut off three feet more than a quarter of it; and from the other end, six feet less than one-fifth of it; and then there remained twenty-five feet. How long was the line?

7. Several persons engage a boat for sailing; if there had been three more, they would have paid one dollar each less than they did; if there had been two less, they would have paid one dollar each more than they did. Required the number of persons and what each paid.

8. A said to B, "Give me \$200 and I shall have 3 times as much as you"; but B replied, "Give me \$200 and I shall have two times as much as you." How much had each?

9. The sum of three fractions is  $2\frac{1}{2}$ ; the sum of the first and third equals twice the second; and the third minus the first equals  $\frac{1}{2}$  of the third. What are the fractions?

10. An officer wishes to arrange 1,600 men in a solid body, so that each rank may exceed each file by 60 men. How many in rank and file?

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### HISTORY.

#### ORIENTAL NATIONS AND GREECE.

1. Describe the part of Asia west of the Euphrates.
2. Describe the grand age of Egyptian history.
3. Describe Nineveh.
4. Describe Israel and Judah.
5. Where did the Greeks get their alphabet?
6. Describe Darius and the Persian government.
7. Describe the physical features of Greece.
8. Describe the results of Spartan education.
9. Describe the battle of Marathon.
10. Describe the closing year of the Peloponnesian War.

#### ROME AND THE DARK AGES.

1. Describe Cincinnatus.
2. Describe the First Punic War.
3. Describe the work of Caius Gracchus.
4. Describe Sulla's massacres, career, and death.
5. Describe Cæsar's work in the East.
6. Describe the battle of Actium.
7. Describe Nero's persecutions of the Christians.
8. Describe Attila.
9. Describe Charles Martel and Pepin.
10. Describe the nature of a fief, and name the three enemies of feudalism.

## MODERN HISTORY.

1. Describe the Franconian emperors of Germany:
2. Describe the Magna Charta and beginning of the House of Commons.
3. Describe the Ottoman Turks.
4. Describe the position of Charles V.
5. Describe the administration and death of Henry IV. of France.
6. Describe Cardinal Wolsey.
7. Describe the reign of Mary.
8. Describe Michael Angelo and Shakespeare.
9. Describe the events from the death of Charles I. of England, to the appointment of Cromwell as protector.
10. Describe the advancement of Richelieu.

## MODERN HISTORY. — (CONTINUED.)

1. Describe George III. of England.
2. Describe the youth of Frederic the Great.
3. Describe the campaign of Charles XII. of Sweden.
4. Describe the three factions of the Legislative Assembly.
5. Describe the youth of Napoleon.
6. Describe the Italian campaign of Napoleon in 1800.
7. Describe the French in Moscow and the retreat.
8. Describe the abuses of Parliamentary representation and the changes the Reform Bill effected in England.
9. Describe the cause of the success of Napoleon III. and his becoming emperor.
10. Describe the war of France and Sardinia with Austria in 1859.

**PHYSIOLOGY.**

1. Describe the spinal column.
2. Describe the complexion.
3. Describe starch.
4. Describe the intestines.
5. Describe the veins.
6. Describe the cerebellum.
7. Describe the organ of touch.
8. Describe the iris of the eye.
9. Describe the Eustachian tube.
10. Name the parts of the eye.

## GIRLS' DEPARTMENT.

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### SENIOR CLASS—FOURTH YEAR.

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#### GEOLOGY.

##### I.

1. Describe calcite; state the three methods of distinguishing it from other minerals.
2. Define sand, mud, clay, and gravel.

##### II.

1. State the various methods for the formation of rocks.

##### III.

1. Name the common ores; describe pyrite.
2. State the effects of air and moisture upon rocks.

##### IV.

1. Describe the process of solidification of loose material.
2. State the methods of mountain-making.

##### V.

1. Name the divisions of the animal kingdom.
2. State to which crinoids belong, and describe them.

##### VI.

1. Name the plants that have made deposits of limestone; of silica; and the animals whose remains are siliceous.

##### VII.

1. Give the grand divisions of geologic history and the different ages.



2. Name the rocks of the Silurian Age.
3. Give the location of the coal areas of North America.

VIII.

1. State the varieties of coal.
2. State the order and variety of vegetation to which the coal plants belonged.
3. Describe the climate of the Carboniferous Age.

IX.

1. State when vertebrates were first introduced and the kind; when amphibians flourished, and the differences between the ancient and modern ones.
2. Contrast Paleozoic fishes with modern ones.

X.

1. Give the marked characteristics of the early birds and mammals; also the resemblances between the Mesozoic reptiles and birds.
2. State the geological phenomena explained by the fact that the earth is and ever has been a cooling globe.

ASTRONOMY.

1. Form of the earth's orbit. State by whom it was discovered, and the other laws discovered by him. Give the diameter of the earth's orbit.
2. The relation of the earth's axis to the pole of the ecliptic. State the effect that follows from this relation.
3. Describe the appearance of the heavens as witnessed by two observers, one at the north pole and the other at the equator.
4. Explain the difference of time between two places in reference to longitude.
5. Explain the terms tropical year, sidereal year, and civil year. Give the rule for determining leap years.
6. Name the planet farthest from the sun; the largest one; give its distance and diameter; give the name and diameter of

the smallest. Explain how a planet may be distinguished from a fixed star.

7. Give the physical constitution of comets and meteorites.
8. Define the aspects of the planets ; also retrograde motion.
9. Name the constellations traced ; and also the planets visible in the evening during the time of this study. Give also any facts of interest in regard to them.
10. State whether the earth's axis is unvarying in the direction it points, and the result from the fact stated.

#### MENTAL PHILOSOPHY.

1. Name the powers of the mind.
2. Describe the condition of a person possessed of only perception, consciousness, and original suggestion.
3. Discuss abstraction.
4. Discuss the succession of thoughts.
5. Define the objective and subjective laws of association. Illustrate the former.
6. Distinguish between representative and mediate knowledge, and presentative and immediate.
7. Give the beliefs involved in an act of memory.
8. Has the method of acquiring knowledge anything to do with our retaining it ?
9. Mention the results of the exercise of reason, and describe the nature of the faculty.
10. State whether all reasoning depends on first truths, and the reason for the assertion.

#### MORAL SCIENCE.

##### TOPICS.

1. Distinguish between the instrumental and governing powers.
2. State the differences between the appetites and the desires.

3. Define unconscious influence, and state the reasons for its power.
4. Discuss the different kinds of slander.
5. What is character ?
6. The relation of truth to human interests and character.
7. Name the three conditions of humanity that require effort in its behalf.
8. Distinguish between the *right* and *rights*.
9. Reasons for not supplying the wants of those able to supply their own.
10. Explain special duties that grow out of special relations.

## PARADISE LOST.

1. Give extracts from Dryden, Gray, and Wordsworth, relating to Milton.
2. State the plan of Paradise Lost, and Milton's indebtedness to preceding poets.
3. Each scholar name the passages that she has learned, and others that she especially enjoys.
4. Give the substance of a French critic's opinion of this poem; also the cosmogony of the universe according to the poem.
5. State what are considered the defects of Paradise Lost, and what its beauties.

## LATIN.

## VIRGIL.

1. Translate — Book II., lines 604 to 614.
2. Parse the following words : — *tuenti*, line 604 ; *qua*, line 607 ; *time*, line 608.
3. Give a brief account of the wanderings of Aeneas up to the time of his arrival in Epirus. What were the Harpies ?
4. Translate — Book III., lines 19 to 27.
5. Give the construction of the following words : — *nitentem*, line 20 ; *horrida*, line 23 ; *convellere*, line 24 ; *tegerem*, line 25 ; *mirabile*, line 26.

6. Translate — Book III., lines 53 to 61.
7. Parse *quid*, line 56 ; *sit*, line 59. Explain the meaning of *sacra*, line 57.
8. Translate — Book III., lines 294 to 307.
9. Give the principal parts of *obstupui*, line 298, and *linguens*, line 300. What was the history of Andromache?
10. Translate — Book III., lines 444 to 453. Give the principal parts of *digerit* and *relinquit*, line 446. Give the derivation of *janua*, line 449.

## FRENCH.

1. Express in French : — My brother has gone to France; my sister is already in Paris and will remain there for some months.
2. State which auxiliary is used with reflective verbs, and whether the rule is absolute or only general. Give the past indefinite (with the auxiliary verb) of the verb *se porter* in full.
3. Express in French : — What do you give me? Give me something good and useful. He has told me all that he knows. She has given it to him. Here are the books she has given him.
4. Translate the following passage : Paris me paraît être le lieu du monde que offre le plus de ressources à l'esprit et le moins à l'âme. Mon esprit y est joyeux et mon âme est triste. Il est impossible de sentir plus vivement que je ne fais ici que l'esprit et ses plaisirs les plus élevés ne sont pas tout pour une créature humaine. Litt. Franc'se, page 244, Oct., Fuillet.
5. Give in full the past definite of the verbs *avoir* and *être*.
6. Give participles present and past of the following verbs : *savoir*, *devoir*, *voir*, *vouloir*, *pouvoir*, *mourir*, *plaindre*.
7. Give in full the present indicative of the verb *recevoir*; the past definite of *écrire*; the future of *tenir*.
8. Express in French the following : — "The bocage, as its name indicates, is covered with trees. One sees there few large forests, but each meadow is surrounded by a live hedge which rests upon trees irregularly planted and very close together."

9. Translate from *Madame Thérèse*, page 98, commencement of chapter 5, eighteen lines.

10. Translate from the same story, page 155, 3d line, seventeen lines, to the phrase, "Adam, entrez donc!"

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## SECOND CLASS — THIRD YEAR.

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### ELEMENTS OF THE ENGLISH LANGUAGE.

1. Over what countries of the Eastern and Western continent has the Aryan family spread?
2. What were the characteristics of the Celts?
3. How did the Celts influence the English?
4. To what are the differences of dialects in England attributed?
5. What early writers did the most to improve the Anglo-Saxon and English languages?
6. In what class is the Norman element represented in England? In what the Saxon? What opinions distinguish the two?
7. Name the most important Latin works written in England during the three centuries immediately following the Conquest.
8. What influence had these works on the English language?
9. Who was the first noted writer of English prose?
10. What was the first long poem in English? Give some account of it.

### CHEMICAL PHYSICS.

1. What is the cause of the dark lines in the solar spectrum?
2. In what ways may heat be transferred?
3. In what way is animal heat maintained?
4. Explain the development of heat by percussion.

5. What is meant by "the declination of the needle"? What is the cause?
6. Describe and explain the electrical chimes.
7. What is a discharging rod? Explain its use.
8. Describe the galvanometer.
9. What is a helix? What is an electro-magnet?
10. Describe the receiver of Morse's telegraph and explain its action.

#### CHEMISTRY.

1. What is the difference between atoms and molecules?
2. What is a radical? Into what classes are radicals divided?
3. How are compound radicals named?
4. How are chemical reactions symbolized?
5. Describe Döbereiner's lamp and explain the theory of its action.
6. Explain the action of soap in cleansing.
7. What is the chief constituent of indelible ink? Common writing ink? Printer's ink?
8. Give the chemical names and formulæ of gypsum, sapphire, quartz, choke damp, and fire damp; and the popular names of  $\text{Fe L}_2$ ,  $\text{NH}_4 \text{ Cl}$ ,  $\text{Ca O}$ ,  $\text{N}_2 \text{ O}$ , and  $\text{KNO}_3$ .
9. Where is calcic carbonate found?
10. What is fermentation?

#### GEOMETRY.

1. What is a plane? a rhombus? a scalene triangle?
2. What are equal, equivalent, and similar polygons?
3. Demonstrate Theorem V., Book I., Bradbury's Geometry.
4. Demonstrate Theorem IX., Book I.
5. Demonstrate Theorem XVIII., Book I.
6. Demonstrate Theorem III., Ratio and Proportion.
7. Demonstrate Theorem IX., Ratio and Proportion.

8. Demonstrate Theorem IV., Book II.
9. Demonstrate Theorem X., Book II.
10. Demonstrate Theorem XVII., Book II.
11. What is an arc? a circumference? a sector? a tangent?  
a secant?
12. Give the solution and explanation of Prop. XII., Book III.
13. Demonstrate Theorem I., Book IV.
14. Give the formulæ for the circumference of a circle, the convex surface of a cylinder, the volume of a cone, the surface of a sphere, the volume of a sphere.
15. What is the frustum of a cone?
16. Demonstrate Theorem VIII., Book V.
17. Upon what theorem depends the finding of the third angle of a triangle when the other two are given?
18. Upon what theorem depends the method of dividing a line into parts proportional to given lines?
19. Give the solution and explanation of Prob. XXXII. Book VI.
20. Tell how a square may be constructed equivalent to a given triangle, and explain.

## POETRY.

1. State the laws of rhyme for English poetry.
2. Describe the Spenserian stanza.
3. Name the different kinds of poetry, and define each.
4. What poet had the greatest influence on the eighteenth century? Describe the man. What was the chief characteristic of his poetry?
5. Give an account of "The Bard."
6. Give a quotation from "The Deserted Village."
7. What was the character of Cowper?
8. Give a sketch of the life of Scott.

9. What was Wordsworth's theory of poetry?

10. Name the author of "The Traveller," "The Vision of Sir Launfal," "The Progress of Poesy," "The Task," "The Castle of Indolence," "The Cotter's Saturday Night," "Cowper's Grave," "Ode on Intimations of Immortality," "Snow Bound," "In Memoriam."

#### LATIN.

#### CÆSAR.

1. Translate — Book I., Chap. XXV., beginning *Capto monte*, to the end of the chapter.

2. Locate the Boii, Tulingi, and Helvetii, and tell what you know of the Boii. Parse *novissimis*, and explain its meaning in this passage.

3. Translate — Book I., Chap. XXXIX., from the beginning through *perturbaret*.

4. Give the derivation of and distinction between *frumentariae* and *commeatus*. Give the construction of *virtute* and *perturbaret*.

5. Translate — Book I., Chap. XLIV., beginning *Non sese Gallis*, through *pependerint*.

6. Give the principal parts of the following verbs: — *fusas esse*, *experiri*, and *pependerint*. Parse *oppugnandum* and *proelio*. Give the synonyms of *proelio*, and the distinctions between them.

7. Translate — Book I., Chap. LII., from the beginning through *exceperunt*.

8. Parse *quisque*. Compare the following adverbs: — *minime*, *acriter*, and *celeriter*.

9. What were the duties of a quaestor? Describe the phalanx of the Germani. Give the derivation and meaning of *comminus*.

10. What was the date of this campaign, and what did Caesar accomplish in it? What office did Caesar hold at that time? What two royal titles derived from his name?



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THIRD CLASS—SECOND YEAR.

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1. Give the rule for punctuating sentences containing series of words in the same construction.
2. What is Campbell's law of use?
3. What is the character of the English language in regard to synonyms?
4. Give the rules to secure clearness.
5. What is splitting particles, and why is it a faulty habit?
6. Correct the faults in the following sentences :— Take any seats near the window which are vacant. A college building has just been erected for the accommodation of one hundred students four stories high. Among her heretical companions, she cannot live holily. How different the reception he received from the one we should have wished for him. I think when all the characters are good, the influence on the mind of a moral work is greatly increased.
7. Distinguish between simile, metaphor, and allegory.
8. Give examples of five different figures.
9. Name the general and special properties of style.
10. Give Byron's description of a thunder-storm, and point out its excellences.

## HISTORY.

1. Describe the early home of the Goths, and give the order of migration.
2. Relate the history of the Exarchate of Ravenna.
3. Name the most distinguished popes of the Middle Ages, stating for what each is distinguished.
4. Describe the origin and growth of banking institutions.
5. What two great steps were taken by the English in the thirteenth century for securing their freedom?

6. Name the Stuart line of sovereigns, and give their characteristics.
7. Give the leading battles of the Civil War in England, and their result.
8. What caused the revolt of the Scots during the time of Charles I. ?
9. What noted generals took part in the war of the Spanish Succession ?
10. For what events are the following years famous : — 1215, 1455, 1648, 1521, 1597, 1660, 1474, 1688, 1572, 1649 ?

## ENGLISH LITERATURE.

1. Give a brief sketch of some poem written in Old English.
2. Give the characteristics of the old English ballads.
3. Draw a picture of theatrical entertainments in the time of Elizabeth.
4. How does Shakespeare excel in depicting character ?
5. Name five of the most noted writers of the seventeenth century, and state in what department each excelled.
6. Draw a parallel between Locke and Bacon.
7. Who were the historians of the eighteenth century ? Name some work from each.
8. Give an account of the rise of periodical literature.
9. Name the authors of the following works : — *The Dunciad*, *Tale of a Tub*, *Comus*, *Principia*, *Annus Mirabilis*, *Grace Abounding to the Chief of Sinners*, *Samson Agonistes*, *The Hind and Panther*, *Cato*, *The Rape of the Lock*.
10. Name the author and the subject of the poem *Lycidas*. Explain the choice of its name. State what is meant by the

“ sisters of the sacred well  
That from beneath the seat of Jove doth spring.”

What is "the oaten flute"? To what places is reference made in the following lines, and why are they specified : —

"For neither were ye playing on the steep  
Where your old bards, the famous Druids, lie ;  
Nor on the shaggy top of Mona high,  
Nor yet where Deva spreads her wizard stream"?

State what is meant by the lines, —

"And sage Hippotades the answer brings  
That not a blast was from his dungeon strayed."

Who is "Camus"? why called "reverend sire"? Who is "the pilot of the Galilean lake"? Explain the phrases, "the rathe primrose," and "the pansy freaked with jet." What is "the great vision of the guarded mount"?

#### NATURAL PHILOSOPHY.

1. How is elasticity developed?
2. Define and illustrate capillary action.
3. What needs to be known in order to determine the action of any force?
4. Explain the action of the compound lever, and give the law.
5. With a lever of the first class, 10 ft. long, having the load 2 ft. from the fulcrum, how great a load would a power of 6 lbs. balance? with a lever of the second class of the same dimensions?

With a wheel and axle whose diameters are respectively 6 ft. and 1 ft., how great a power would balance a load of 84 lbs.?

If a system of two fixed and two movable pulleys be used in raising a load of 200 lbs., how much power must be employed?

If an inclined plane has a length of 10 ft., and a height of 4 ft., how great a power, applied parallel with the plane, would support a load of 100 lbs.?

6. Describe Brahma's hydraulic press.
7. Define specific gravity, and give the law for finding it.
8. Give Mariotte's law, and the deductions from it.
9. How may distance be determined by means of sound?
10. Give the wave theory of light.

## LATIN.

1. Give the principal parts of *vergit*, *dividet*, *suppeteret*, *exustis*, *rescindi*, *coacturos*, *proficiscantur*, *eripuit*, *consciverit*, *potiri*.
2. Decline *uterque*, *Marco Pisone*, *jusjurandum*.
3. Give the future active indicative of *cogo*; present subjunctive of *exsequi*; perfect subjunctive of *exeat*; imperative active of *adsciscunt*; present active subjunctive of *transeo*.
4. Give the dative plural of *spe*; ablative singular of *finibus*; genitive plural of *vis*; ablative singular of *domus*; dative plural of *filia*.
5. Compare *proximus*, *perfacile*, *potens*, *expeditius*, *ulterior*.
6. Translate lines 6 to 14 inclusive, Book I, Chap. I, Caesar's Commentaries.
7. Parse, in the same, *propterea quod* and *virtute*, and explain the construction of *ad effeminandos animos*.
8. Translate the last sentence of Book I., Chap. V.
9. In the same, give the construction of *Rauracis*, *finitimis*, *consilio*, *receptos*, *sibi*.
10. Translate Chap. VI., last sentence, and explain the phrase, *Auto diem quintum Kalendas Apriles*.

## FOURTH CLASS — FIRST YEAR.

## ALGEBRA.

1. Divide 24 apples between two boys in such a manner that the product of their shares shall be 140. What will be the share of each?

2. There is a fish whose tail weighs 9 lbs., his head weighs as much as his tail and half his body, and his body weighs as much as his head and tail. What is the whole weight of the fish?

3. A has two horses and a saddle worth \$250. Now if the saddle be put on the first horse, his value becomes double that of the second horse; but if the saddle be put on the second horse, his value becomes triple that of the first horse. What is the value of each horse?

4. A man driving a flock of sheep to market was met by a party of soldiers who plundered him of  $\frac{1}{3}$  of his flock and 6 sheep more. Afterwards he was met by another company, who took  $\frac{1}{2}$  of what he then had and 10 more, when he had only 2 sheep left. How many had he at first?

5. A father said to his son: "Twenty years ago my age was four times yours; now, it is just double." What was the age of each?

6. Extract the square root of 10.4976; the cube root of 16581375.

7. A charitable person distributed a certain sum among some poor men and women, the numbers of whom were in the proportion of 3 to 4. Each man received  $\frac{1}{4}$  as many dollars as there were persons relieved; each woman received 3 times as many dollars as there were women more than men. How many were there of each?

8. A man sold a certain number of sheep for \$175. If he had sold 10 more for the same money, the price of one sheep would have been \$2 less. How many did he sell?

9. A man had a field whose length exceeded its breadth by 15 rods. He paid \$7 a rod to have it fenced, and the number of square rods in the field exceeded the number of dollars in the cost by 4440. Required the length and breadth of the field.

10. Add  $\sqrt{\frac{1}{3}}$  and  $\sqrt{\frac{3}{5}}$ . From  $3\sqrt{\frac{1}{3}}$  take  $\sqrt{2}$ . Multiply  $\sqrt{\frac{2}{3}}$  by  $\sqrt{\frac{3}{5}}$ . Divide  $\frac{3}{5}\sqrt{\frac{1}{3}}$  by  $\frac{1}{2}\sqrt{\frac{3}{5}}$ .

#### PHYSIOLOGY.

1. Of what are bones composed? Give two uses of bones. Define ligaments and state their use. What are vertebrae?

2. Define muscles, state their uses, and name the kinds.

3. Show from the structure and functions of the skin that bathing is necessary.

4. Describe the various digestive fluids, state where secreted, and give the action of two.

5. Describe briefly the changes which the food undergoes before it is fit to nourish the body.

6. Trace the course of the blood from some point of the circulation to the same point again.

7. How do the arteries and veins differ?

8. Name the organs of respiration.

9. Of what does the nervous system consist? Describe the brain.

10. Give the structure of the eyeball.

#### ANCIENT HISTORY.

1. Give a brief sketch of Egyptian history. Explain caste.

2. Give an account of the conquests of Cyrus.

3. Who was Lycurgus? What was the object and result of his legislation?

4. Cause and result of the Peloponnesian war.

5. Give an account of Greece from the death of Alexander until it became a Roman province.
6. Who were Homer, Miltiades, Pericles, Thucydides, Socrates, and Plato?
7. How was Rome governed from the time of the expulsion of the kings to the time of Caesar?
8. What led to the formation of the first triumvirate, and what caused its dissolution?
9. Give an account of the second triumvirate.
10. Give briefly the changes which took place in the Roman Empire after the death of Augustus.

## BOTANY.

1. Name the parts of a complete leaf, and describe the blade.
2. Name and define three terms which apply to the general shape of the leaf, and two which apply to the base.
3. What is the difference between a pinnately and a palmately compound leaf?
4. What is inflorescence? Describe three flower clusters.
5. What is the use of the flower, and what are the essential organs?
6. What are the parts of the pistils?
7. Describe the different kinds of pistil.
8. What kind of fruit is the *apple, peach, grape, blackberry, strawberry, tomato, bean, squash*?
9. Describe a leaf according to schedule.
10. Analysis of a flower.

## LATIN.

1. Translate the following : — Hic rex interfectus est scelere filiae Tulliae et Tarquini Superbi, filii ejus regis, cui Servius successerat. Nam ab ipso Tarquinio interfectus est. Tullia in forum properavit, et prima conjugem regem salutavit. Quum

domum rediret, aurigam super patris corpus, in via jacens, carpentum agere jussit.

2. Construction and rule of the following words: — *scelere*, *cui*, *conjugem* and *regem*, *domum*, *aurigam*.

3. Decline the following words: — *filiae*, *fili*, *domum*, *conjugem*. Give the synopsis of *rediret* in the indicative and subjunctive active.

4. Translate: — Quum Priscus Tarquinius occisus esset, Tanquil de superiore parte domus populum allocuta est, dicens; regem grave quidem, sed non letale vulnus accepisse; eum petere, ut populus, dum convaluisset, Servio Tullio obediret.

5. Compare *superiore*. Give the vocative singular of Tarquinius. Give the mode of *obediret*, and reason for it. Give the tense of *obediret*, and reason for it. Subject of *petere*. Construction of *petere*. Compare *gravis* and *graviter*. Gender of *parte*, and reason. Give the mode of *occisus esset*, and reason. Give the tense of *occisus esset*, and reason.

6. Lepidus declaravit quantum haberet odium servitutis. The reason for the mode and tense of *haberet*. Lycurgi temporibus Homerus fuisse dicitur. Explain the personal and impersonal construction. Valeant cives mei; sint incolumes, sint beati. The reason for the mode of *valeant*.

7. Principal parts of: — *circumdo*, *habeo*, *ago*, *regno*, *possum*, *redeo*, *ico*, *jaceo*, *ardeo*, *occido*.

8. Translate into Latin: — They say that the soldiers were praised by Caesar the general. He praised the soldiers that he might be praised by them. He so praises the soldiers that he is praised by them.

9. He fled from Rome to Athens. Were you in Corinth two years? Cicero was more learned than Cato. He is proud of his wealth. Do not sell happiness for gold.

10. They asked what I did. They ask what I have done. Let us praise the bravery of the soldiers. They called Herodotus the father of history. The island was called Sicily.



QUESTIONS  
SUBMITTED TO THE  
GRAMMAR SCHOOL SCHOLARS FOR ADMISSION  
TO THE  
HIGH SCHOOL, JUNE, 1878.

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GRAMMAR. 1878.

1. Write sentences containing plural of chimney, money, lady, daughter-in-law, sheep.
2. Write sentences containing possessive singular of James Adams, goodness, conscience, Moses.
3. Write sentences containing the superlative degree of evil, little, serene, up, and vivid.
4. State the difference between a relative pronoun and a personal pronoun, and write a sentence containing the possessive case of *which*.
5. State how a verb in the passive voice is formed, and how it differs from the passive form.
6. Write a sentence containing a verb in the passive voice, and one in the passive form not in the passive voice. Name the principal parts of lay, lie (to recline), sit, set, bid, and write sentences containing the verbs set, fly, and drink in the common form, indicative mode, present perfect tense.
7. Parse italicized words:—His not *having received* the letter *was* the cause of his disappointment. *What though* he succeeds this time, he will ultimately fail. *What!* could ye not watch with me one *hour*?

8. This is *exactly what* he wanted. There is nothing *what-ever* that will satisfy him. He pursued his studies *but* for one month. It was as beautiful a day *as* ever dawned.

9. Not *less* than one *fourth* was lost. There is a flower about *to blow*. From peak to peak the rattling *crag*s among leaps the live *thunder*.

10. If needed, correct the following:— Which is fartherest north, Paris or Quebec? After he had laid by his book, he laid down to rest. Have either of you learned your lesson? I expected to have seen him before he left. The house is building. The anthem is now singing by the choir. Grammar is now reciting. He delivered an eulogy on President Lincoln.

Punctuate and capitalize:— the clock on the high tower struck and the sound falling on his ear recalled his parents early love for their erring son the lessons they had taught him the prayers they had offered up in his behalf.

#### ARITHMETIC. 1878.

1. Divide  $-\frac{.05}{8} + \frac{-.06}{8}$  by  $\frac{.07}{8}$ .

2. A broker expended \$1,450 for sugar at  $8\frac{1}{4}$  cents a pound, and received  $1\frac{1}{4}\%$  commission on the purchase money. How much money did he receive?

3. A merchant bought 1,200 barrels of flour at six dollars a barrel, and sold the same for \$6.50 a barrel; he received in payment a note payable in nine months, which he discounted at a bank at 5%. How much was his gain?

4. A sold  $\frac{1}{3}$  of his flour at a gain of 12%;  $\frac{1}{4}$  at a loss of 20%;  $\frac{1}{6}$  at a loss of 10%. For what per cent. must he sell the remainder that he may gain 5% on the whole?

5. I bought a horse for \$180. What shall I ask for him that I may fall  $12\frac{1}{2}\%$  from the asking price, and yet gain 15%?

6. A has a circular garden and B a square one, the perimeter of each is 64 rods. Which has the larger area and how much?

7. Find the contents, in wine gallons, of a circular cistern 6 ft. 4 in. deep, the top diameter being 5 ft., and the bottom diameter 4 ft. 6 in.

8. Find the cost of papering a room 24 ft. 6 in. long., 16 ft. 4 in. wide, 9 ft. 5 in. high, with rolls of paper 8 yds. long,  $\frac{3}{4}$  yd. wide, at 83 cts. a roll. No allowance made for doors, windows, etc.

9. A grocer bought a sack of Java coffee, containing 180 pounds, at  $16\frac{3}{4}$  cents a pound. If he paid  $1\frac{1}{2}$  cents a pound for roasting, and there was a loss of  $\frac{1}{2}$  oz. to each pound by the process, at what price per pound must he sell the roasted coffee to gain  $12\frac{1}{2}\%$ ?

10. There is a field in form of a rectangle; the sum of its diagonal and one of its sides is 160 rods, the length of the other side is 54 rods. How many acres in its area?

#### HISTORY. 1878.

1. Give an account of King Philip's War.
2. Give an account of the settlement of Jamestown and of the trials experienced.
3. Give an account of the battle of Lexington.
4. Give an account of Burgoyne's campaign.
5. Give an account of the siege of Yorktown.
6. Give an account of the investment of Petersburg and Richmond.
7. Name the principal officers of the Civil War.
8. Name the principal battles of the Civil War.
9. The Federal Constitution, define, and state some of the causes which led to its adoption.
10. Bills of revenue and other bills originate how, and how are they passed?

## GEOGRAPHY. 1878.

1. Define latitude and longitude. Give the latitude of Providence, London, Quebec, Calcutta, Lima.
2. Draw a map of Africa.
3. Name exports of countries bordering upon the Mediterranean Sea.
4. Name exports of Asia. Name ten islands or groups in Oceanica.
5. Draw the Turkish war map. Locate Constantinople, Adrianople, Bucharest, Belgrade, Kars, or five war towns.
6. Draw a map of Rhode Island.
7. Draw a map of the Mississippi river, with important branches. Locate capitals of States bordering upon the river.
8. Locate three cities of Spain, of Germany, of Austria, of China, of Mexico.
9. Describe a journey from St. Petersburg to Odessa by water.
10. Draw a map of Gulf States.

## SPELLING. 1878.

Plurality, pleurisy, proboscis, domicile, codicil, utensil, parole, patrol, mnemonics, pneumatics, celebrate, separate, aspirate, pomegranate, chalybeate, pursuivant, controversial, lassitude, antidote, antecede, supersede, honeyed, villainy, litany, numismatics, sadducees, supplicate, suppletory, surgery, sturdy, sterling, assuetude, tenable, deleble, indelible, isosceles, ineligible, inelegant, crystallize, michaelmas, apocrypha, circuit, surfeit, lettuce, jewry, juicy, binnacle, escheat, sycophant, pommel.

*From E. M. Stone*  
*John*

1879.]

CITY DOCUMENT.

ANNUAL REPORT  
OF THE  
SCHOOL COMMITTEE  
OF THE  
CITY OF PROVIDENCE.

[Presented June 20, 1879.]



PROVIDENCE:  
PROVIDENCE PRESS COMPANY, PRINTERS TO THE CITY.  
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[No. 22.]

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# REPORT.

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TO THE HONORABLE THE CITY COUNCIL OF THE CITY OF PROVIDENCE :

The great event in the history of the public schools of this city, the past year, has been the formal opening, by appropriate dedicatory services, of the High School. This is the realization of a long delayed but fondly cherished hope by many who have the highest good of our public school system at heart. Only those, who, by personal knowledge of the practical working of our system, could fully realize the great disadvantages under which all, having in charge the higher education of our youth were laboring, until the present noble structure, combining architectural beauty with convenience, comfort, and a remarkable adaptation to the needs of high school work was completed. With some exceptions the school houses belonging to the city are in a similar condition to what they were a year ago.

The long-continued business depression, in connection with an unusual amount of sickness prevailing

throughout the city, have depleted the schools. In many cases the work of the schools has been interrupted, and progress retarded by the unusual number of absences. Perhaps never, in the history of this city have the public schools, under our care, suffered so much from non-attendance as during the past year. Notwithstanding these hindrances the scholarships in our schools never ranked higher. The instruction was never more thorough. A very decided improvement has been made in many of our primary schools, by encouraging the younger scholars to use the pencil on slate or paper, thus beguiling many a weary hour, in addition to aiding these children in acquiring a knowledge of letters and their combinations. Drawing has been successfully taught in this department.

Elementary instruction in natural history and mineralogy has given interest and we hope added lasting advantage to this part of our public school instruction.

Definition of words and explanation of objects coming within the range of youthful observation is another step in the advance movement of the lower grades of our schools.

Ideas as well as words are thus taught. A very creditable exhibition of one of our primary classes was made in Normal School Hall at the Teachers' Institute.

Competitive examinations which have been made in some of our school districts, inspire enthusiasm and help forward the work in the primary and intermediate

schools. Our Grammar schools are widening the range of their instruction in the line of the practical. While the prescribed technical studies for each grade are not neglected; so far as the practical can be taught in theory it is being done.

Special attention is given to composition writing, and not unfrequently original compositions are read in these schools, which would be creditable to University students. The genius and working of our government as taught in our schools is a most excellent preparation, fitting our youth for a proper discharge of the duties of citizens.

Oral teaching is happily resulting in producing self-reliance in the scholars and calling forth originality of thought and expression. The high school is accomplishing results equal to the most sanguine expectations of its friends. The increased facilities furnished by the present high school building are being improved in a most commendable manner. We have good grounds for expecting an increased harvest of ripe scholarship from this crowning branch of public school instruction. Among those ranking the highest as teachers in our city schools, are graduates from our Providence High school; which fully justifies the law, governing the appointment of teachers to our schools. If choosing teaching as a life-work, thorough mental preparation in view of that work, an earnest, conscientious devotion to this calling, and in many instances long experience are

of any importance in a teacher, then are the most of our schools furnished with the essentials of success.

Advantage has been taken of the most advanced thoughts on the subject of education. The teachers, as a class, have shown not only a willingness but a desire to avail themselves of all profitable practicable suggestions made to aid them in their work. We would by no means attempt to convey the idea that our schools are above criticism, or that they have reached the highest possible excellence; but are happy to say that no just and impartial criticism need be feared, nay, rather is desired.

What is especially called for at this time, is, that all who think that serious defects are found in the working and results of our schools at the present time, should put themselves in possession of the requisite data for judgment, by a personal inspection of these institutions as they are to be found through the assigned terms of the school year. Our schools cannot be judged to-day by what they were twenty, ten, or five years ago. They are to be judged by their present standing and the fruitage at present produced.

If parents could only be made to realize the importance of their frequently visiting the schools, and they should act in view of their convictions, incalculable good would result. Would it not be advantageous to all concerned to have those upon whom rests the responsibility of making appropriations for the schools,

and looking after their material interests, visit them occasionally?

What is needed to give increased confidence in our admirable system of public instruction is to have those taxed for their support, know by personal visitation, the work done in a quiet and earnest way. What are seen and heard at exhibitions and examinations are but a part of the results secured by patient, persevering indefatigable toil, the fruit of years of study and exhaustive mental labor. It would be a surprise to many in our city, who may not have kept themselves informed of the working of our schools, to learn by personal observation the promptness and accuracy of answers given to questions of general information.

If any think that thoroughness has been sacrificed to the wide range of instruction, they should do themselves and the schools justice by learning the facts in the case. It is encouraging to know that eminent educators from the various parts of the country have, by a personal examination of our schools through all the grades, pronounced most favorably upon what they have seen and heard. There can be no doubt of the comparative excellency of the public schools of this city, taking the best schools in our land as the basis of judgment.

No vacation-schools were kept last summer for the want of appropriation. The evening schools last winter accomplished a good work. The benefits growing out of sewing taught in our schools cannot be estimated

by any commercial standard. It is, no doubt, safe to say that singing, as taught throughout the city in our public schools, never ranked so high as it does to-day.

While, with just pride and hope we point to our unsurpassed system of free education, we cannot fail to be impressed, not to say alarmed, at the undercurrent of evil, which like the surgings of the sea, is imperiling the well-being of society. The mutterings of the demagogues, who despise government, hate law, delighting in anarchy, whose business it is to undermine and thus destroy the framework of our social and national life, suggests lessons which we cannot consistently neglect. Humanly speaking, the hope of this Republic is in the youth, who are being educated in the schools of the land. Hence, the necessity of guarding with ceaseless vigilance the early development and culture of those into whose hands will fall the administration of our municipal and national affairs. It is said: "Free institutions are yet on trial." The first century of our national existence has indeed developed glorious possibilities of success; but it has also revealed exposures to evil, not only appalling in their magnitude, but of a character hitherto unsuspected. The dangers of such a development have suddenly burst upon us without warning.

The effort to remove these exposures has proved sufficiently discouraging to daunt the courage of most men, because they are so connected with the structure

of modern society as to render it difficult if not impossible to abolish them without changing the social condition with which they are inextricably entwined."

Can it be a question with thoughtful persons what is the direct and efficient remedy for these and other dangers which are threatening the Republic? So far as human agency can interpose barriers, or originate remedies, we must look to home influences, seconded by the schools of the land. A wise regulation, governing this body in the selection of teachers requires the best mental drill, which is provided for in our curriculum of studies.

But it is not only intellectual culture, broad, clear, and correct views of mental drill joined with a love for the work, that are needed in teachers of our youth. All these in connection with the truth deeply imbedded in the heart, that the work of a teacher is not only to adhere strictly to the by-laws, attend faithfully to technical instruction, govern the pupils committed to their charge, but so far as may be possible within the limits of their obligations, to cultivate manners, and by example and precept seek to ineffaceably impress upon the minds and hearts of these pupils the principles of truth and righteousness.

The pupils in our schools represent all classes and conditions in society. It is a comparatively easy task to govern and educate the children of parents who exercise a proper care of their offspring in authority, company, reading, amusements and morals. In many cases, how-

ever, our schools are filled with those whose home life is anything but healthful, and on whose youthful minds impressions are made, which are serious obstacles in the way of intellectual and moral advancement.

We must look to our schools as safeguards against the inroads of rude or cultivated vice. A large amount of the popular literature, at the present time, is positively demoralizing. The same may be said of some of the liberally patronized amusements of our city. Our schools are held responsible for impaired health, and broken down constitutions, when in many cases, the real causes are overlooked. Is it not true that filial insubordination is the mark of our own time and our own country?

There was a day when boys and girls were an attractive part of society. By an unnatural process of becoming independent through the sweet pleasure of growing old, boys and girls are such no longer.

Youth now takes precedence of age, and reverence is dead. Respect is no more paid to the official symbols of authority. Insubordination is the radical vice of the nation, and its fruits are lawlessness, dishonesty, misrule, corruption and fraud.

“Let us beware that the temple our fathers raised, does not totter to its overthrow.”

On behalf of the Committee,

LEMUEL OSLER.

GILBERT E. WHITEMORE,

OREN WESTCOTT,



EXTRACTS

FROM THE

QUARTERLY REPORTS OF THE SUPERINTENDENT.

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PROVIDENCE, Nov. 22, 1878.

*To the School Committee of the City of Providence :*

GENTLEMEN :—There have been but few changes in the condition of our schools that require any special notice. The usual amount of work has been accomplished with the ever varying success.

The number of pupils admitted into all our schools is nearly the same as a year ago. There has been an increase of only twenty-four since last November. On account of the depression in business many families have left the city. Sickuess and extreme poverty have also kept many children from school. There is also a very large and constantly increasing number of youth who

ought to be at school, and would be if there was a stringent law compelling them to attend. None but teachers and those familiar with the discipline and government of our schools can form any just estimate of the magnitude of the evils the city is suffering from this class of truants and vagrants. It is an alarming fact that hundreds and hundreds of youth are allowed to roam our streets in idleness, to contract the most vicious habits, thereby endangering the peace and security of our city. If this evil is suffered to increase unchecked, it needs no spirit of prophesy to predict what our future, at no distant day, will be.

Our long desired and much needed High School building has, at length, been completed, and dedicated to the noble purposes for which it was erected. It is a splendid edifice, and will be a standing monument to adorn our city. Let the facilities for instruction, and teaching in the school rooms, correspond to the magnificent structure, and nothing more need be desired.

A larger number of pupils have been registered in the High School this term than ever before. In the girl's department, there have been admitted 309, and in the boys, 209.

One hundred and twenty-five of the boys are pursuing the English course, and eighty-four boys and fourteen girls are pursuing the classical, preparatory for college.

There has been a change of Principals in the Federal Street Grammar School; Mr. Orville B. Grant has left,

and Mr. I. O. Winslow has been appointed, by the Committee of Qualifications, to take his place.

There has been also a change of Principals in the Greenwich Street Grammar School. Mr. Benjamin V. Gallup, after nearly twelve years of faithful, devoted service, has rested from his labors and passed away, with the esteem and respect of all who knew him. Mr. George F. Weston has been appointed in his place.

By readjusting the districts, and by assigning a larger number of pupils to a teacher, we have sixteen less teachers employed now than we had a year ago. The primary school on Front street has been given up, and the pupils sent to the nearest schools. During the year one room has been closed in State street, one in Walling street, one in Meeting street, one in Jackson avenue, and one in Doyle avenue Grammar School, and two in Bridgham School. By changing the limits of the districts and increasing the number of pupils to a teacher, the extra teachers in Carpenter, Federal, Ring, Hammond, Beacon, Potter avenue, Jackson and East streets, have been dropped. The School on Fruit Hill has not been opened the past term, as the City Council has not yet decided whether the school shall be any longer continued.

The evening schools have commenced with encouraging prospects of success. The whole number admitted has not, as yet, been as large as in years past, but the percentage of attendance in proportion to the number

admitted, has been thus far much greater. The very great value of these schools to a large class, who have no other opportunity of acquiring the elements of a good education, can hardly be overestimated. It is to be regretted that there are so many needing the advantages of these schools, who do not avail themselves of them.

The teachers of sewing are doing a great and good work for the poor children in many of our schools. If the older girls were taught to cut plain garments as well as to sew, a still greater amount of good would be accomplished. In many places cutting garments in connection with sewing is taught with the most gratifying results.

There has been a gradual improvement in the methods of teaching in many of our best schools. Teachers aim now more exclusively to teach ideas and principles, clearly elucidated by visible and tangible representation, instead of dry rules and abstract technicalities, which youthful minds cannot comprehend. Words are regarded as signs and symbols of ideas and thoughts, and not the ideas themselves.

While there has been considerable advance in this direction, there is still need of greater improvement. Some have been so long wedded to old methods as to find it extremely difficult to break off or to adopt anything new.

Great caution, however, is necessary lest teachers,

while aiming, without due thought and consideration, to avoid one extreme, should run into the opposite.

One of the most common, if not the greatest faults of teachers, has been that they have been confined too exclusively to text books. This is now almost universally conceded to be a most serious defect that ought at once to be remedied ; but the ignoring text books entirely in teaching and relying upon oral instruction is an evil, of even greater magnitude. The true purpose of education is not merely to fill the mind, but to quicken its powers into self-activity and thereby to improve and strengthen it. When children first enter the paths of knowledge everything should be made as easy, pleasant and attractive as possible. Their perceptive powers should be quickened by every charm of novelty that can be thrown around the visible objects from which they are constantly gaining new ideas.

A child's knowledge must of necessity be of the concrete and not of the abstract. Words are signs and symbols of ideas in the minds of a child, only when they have been associated with visible objects and their qualities.

But after the earlier stage has been passed, children must be taught to use their own powers, and use them vigorously. The attempt to make education a mere pastime, is an absurdity that should be scoffed at, as idle and visionary. There never has been any thorough education, nor can there ever be, without hard workers.

The powers of the mind, as well as those of the body, acquire strength and vigor only by use. And the highest function of a teacher is to instruct his pupils how to use their powers aright, by a wise and healthful exercise.

As the treasures of knowledge are mainly contained in books, pupils should be early taught to know how to use them. The rapid, discursive, and thoughtless manner in which books are now read by our youth, is one of the greatest obstacles to the progress of a sound education.

The kind and amount of oral instruction that should be given in our schools requires also the most careful consideration. There are many subjects that are not included in any course of study that can be and ought to be presented orally and clearly in every school.

What Infinite Wisdom has seen fit to make in the varied forms of nature is certainly worthy of the attention and careful study of man. This should ever constitute an important part of education. It should begin with the earliest dawn of intellectual life. Nature has a language that is addressed to every intelligent being. Its alphabet should be learned as one of the very first lessons taught, and its expressive and symbolical language should be the study of our whole life. Oral teaching, however, should be limited to, and closely connected with, the studies the pupils are pursuing. It should always be definite and exact, explicating or en-

forcing some new truth or fact, and so intimately related to the subject taught as to be thoroughly incorporated with it, giving to it greater clearness or force.

Whatever a pupil can do for himself should never be done for him. The office of the teacher is to awaken thought ; to guide and assist, and not to do the work of his pupils. Knowledge that is acquired without effort is of but little value ; it soon fades from the memory and is forgotten.

All oral teaching that is general, discursive, without a definite aim, and is beyond the range of the studies or the capacities of the pupils, tends to distract the mind and interrupt the connected current of thought which is essential to all true discipline. While the teacher's constant aim should be, to make every thing clear and easily apprehended by the dullest capacity, there should be no excess of explanation. The random talk that is sometimes heard in some schools on almost every variety of topics without method or purpose, wordy and meaningless, is ever to be deprecated as a most serious evil. Far better for a teacher to be silent unless he can open his mouth with wisdom.

As our school system appears not to be thoroughly understood by our younger teachers and by many others, a brief statement of its prominent characteristics may not be inappropriate at the present time.

Our system differs widely from that of many other cities in several important particulars.

We have four distinct grades: The primary, the intermediate, the grammar and the high. These are subdivided into classes and have a programme of studies for each grade and for each class. The course of studies for the primary and intermediate is arranged for two years and a half in each; in the grammar schools, the course is four years; and in the high school, four years are required to complete the full course, in the girls' department and also in the classical, in order to receive a diploma; but in the scientific and business department the prescribed course is three years with an optional one of four years. Although the studies have been carefully arranged for each grade and each subdivision, there is no compulsion whatever to compel pupils to complete it in a given time. It is left entirely for parents to decide whether their children shall pass through these different grades in the regular appointed time, or whether they wish them to take a longer period. The full course from the primary to the High School embraces nine years. Some pupils accomplish it in eight years, while others often spend ten and even twelve years. All that is absolutely required is that whatever is studied shall be thoroughly learned, and there shall be no imperfect work done in any grade; and no undue stimulus or forcing process of any kind, by which pupils are often urged beyond their strength and capacity, is allowed in any school. If such cases sometimes occur, it must be through the fault of teachers and



the negligence of parents in not exercising that watchfulness over the studies and the health of their children, which is their imperative duty.

New classes are formed and promotions made in all the schools, but the high school, every six months ; but pupils can be promoted to a higher class when fully qualified at the beginning of each term. The principal aim in each school is to lay the foundation of correct and studious habits in every pupil. It is not sought to communicate the largest amount of knowledge in the shortest time, but rather by true and exact method of study and discipline to prepare each pupil to pursue in after life a course of study and scientific investigation in the most profitable and successful manner.

In the high school, the course of study is designed to be as practical as possible, fitting young men, especially, not only for the varied trades and pursuits of life, but for the important duties and obligations of citizenship. The elementary principles of political economy, as well as the constitution of the United States and our own State, receive especial attention in our high school and in most of our grammar schools.

In comparing our school system with other large cities, we find that there are several important features which are peculiar to our own. In the first place we have no fixed and permanent boundaries, like ward lines, to our school districts, but these are adjusted each term to equalize, as far as possible, the number of pupils to a

teacher and to accommodate the parents in the very best manner. Were it otherwise, there would be demanded in each district a large supply of extra seats to meet the wants of the very frequent changes and removals from one district to another; and in contiguous schools some rooms would be crowded to excess while other teachers would not have the requisite number of pupils.

Another important and distinguishing feature in our system is the establishment of an intermediate grade, between the primary and grammar. This is also a very marked peculiarity, which makes it equally efficient and far more economical than that adopted in most other cities. Were our intermediate scholars to be accommodated in the grammar schools, six or seven new grammar school buildings would be required, and the same number of additional masters. This arrangement is not only decidedly more economical, but it is a great convenience to parents that their children from five to ten or eleven years can go to the same school building and at a much shorter distance than would be required to attend a grammar school, and still, to be free from the annoyance from older boys. The principal, if not the only objection that can be urged against this arrangement, is that there are sometimes in these schools large and unruly boys who are, with great difficulty, disciplined by a female teacher. This is, however, fully remedied by the aid and assistance rendered by the Superintendent, which necessarily, increases very much

his duties and responsibilities. More than two-thirds of all our scholars are now taught in our primary and intermediate schools, at a cost for salaries only, of little more than ten dollars a year for each pupil ; in all the schools, it is but fourteen dollars a year for each pupil.

Another peculiarity of our system, resulting from our method of grading, is the very large number of female teachers employed in proportion to the males. There is no city with which I am acquainted where the proportion of female teachers to the male is so great. We have now employed in our grammar, intermediate and primary schools 252 teachers, 243 of which are females and but nine males. In the high school there are six male teachers and ten female.

It is not claimed that our school system is perfect, or that it may not yet be improved, but it is as efficient and more economical than any other in most large cities.

The efficiency of our schools must, and always will, depend mainly upon the skill and faithfulness of the teachers. The best means and agencies that can be employed will be comparatively of but little value without earnest, skillful work. And teachers should, in a great measure, be held responsible for results ; not so much for the amount of work accomplished as for the thoroughness and perfection of the work itself. Pupils should be advanced just so fast and no faster than they can clearly comprehend what they are doing. Teachers are not to be held responsible for a want of capacity in

their pupils ; neither are they to be accountable for a lack of application when they have used all judicious means to secure it. In every true teacher there is a quickening influence and moral force that cannot be described, but, to be fully appreciated, its power must be seen in the school-room. The old, blind, monotonous method of simply memorizing should be abandoned by all who claim to be teachers, and pupils should be required not only to gain such knowledge as is intelligible and exact, but they should be also taught how to use it successfully by daily practical exercises.

The minds of pupils are not to be regarded as exhausted receivers, to be filled with all sorts of useless trash, but endowed with latent energies and powers, to be developed and quickened into new life. The practice that is found in a few schools, of compelling the pupils to commit to memory useless dates and unimportant facts in history in the language of the text book, and in geography, to locate places of but little note, and to describe small and insignificant branches of rivers, cannot be too emphatically condemned, as involving a great waste of valuable time and also of inflicting an irreparable injury on the pupil. A true teacher, like a skillful miner, knows how to separate the dross from the pure gold.

All true progress is usually of slow growth, and is the fruit of large experience and careful observation, guided by intelligence, and free from all preconceived bias or

prejudice. Unfavorable criticism of our schools often originates in a partial or limited knowledge of their present true condition. Sometimes it has reference to isolated facts that seldom occur, or to what existed in the past. Judicious criticism, however, when prompted solely by a desire to correct evils and remedy defects, is one of the best means for continued improvement. Radical changes in modes or methods that are not the fruit of large experience and careful observation, but are the fanciful theories of some self-confident enthusiast, should be received with distrust, and not till after a thorough examination. It is vastly easier to pull down than to build up, and what the wisest men have been years in constructing may be impaired and destroyed by inexperienced and ambitious reformers.

The prime necessity of every good school and one of its highest excellences is a judicious discipline. An ability to govern a school wisely and well without the waste of valuable time, and without resorting often to corporal punishment is one of the rarest and most valued qualifications of a teacher. The highest literary attainments will be of but little avail without it. It may be said with equal truth of a teacher as of a poet, he must be born, not made. There are more failures from incompetency in discipline than from all other causes, as there is no test that can be relied on and that will be perfectly satisfactory, but an actual trial. To govern others, one must first learn to govern himself.

While rightful authority should ever be maintained firmly by judicious means and should be respected by prompt and cheerful obedience, yet it should never be forgotten that children have rights that should not be infringed. They should be subject to no more restraints than is necessary to maintain good order and to secure the successful working of the school. But a kind of petty tyranny in the school-room, that would inflict pain and penalties for the infraction of needless and arbitrary rules, and that does not carefully distinguish between willful and obstinate resistance to authority and that which is unintentional and thoughtless, is an assumption of power that cannot be too emphatically condemned.

There would be a far less number of truants from our schools if all our teachers would manifest a deeper sympathy for their pupils, especially the unfortunate ones who have not the best home culture and training, and would in every way encourage and stimulate them in their studies and aim to make the school-room as attractive, pleasant and comfortable as possible. There should be nothing in connection with our schools that is repulsive to the taste and feelings of children, or is in any way promotive of their discomfort. The associations and attractions of many schools are so great that there are but very few absences, and these only for the most urgent reasons.

The cordial and active co-operation of parents, not

only with teachers, but also with the Committee and Superintendent, is absolutely necessary to secure the best results in all our schools. It cannot reasonably be expected but that, under any system, however perfect, when from twenty to thirty experienced teachers are leaving our schools every year, and their places, in most instances, supplied with those without experience, that there would be mistakes and errors in judgment, both in discipline and in teaching. And as these faults, whether serious or trivial, come first to the knowledge of parents through their children, they should at once be brought to the notice of those whose duty it is to correct them. Parents, however, cannot be too careful and cautious in giving implicit credence to all reports that are brought to their notice, lest they sometimes unconsciously encourage their children in wrong doing, and thus inflict a permanent injury on the school.

The relations of parents to the Superintendent and the Committee should ever be of such an intimate and confidential nature that they would be not only perfectly free, but would regard it as a duty to make any suggestions in regard to the work of a school. In no other way can all the defects, as they occur, be remedied. There should be no hindrance to this free, confidential relation whatever. It is sometimes said that parents are often deterred from making any communication in reference to teachers, for fear that their children will be treated less kindly and with less attention or will in

some way suffer in consequence. I trust such apprehension is groundless ; for any teacher, who should so far forget his high and responsible duties, as in the slightest degree, either in manner or in any other way, to treat a child with less kindness and favor in consequence of any criticism made by its parents, however unfavorable it may be, should be promptly dismissed, as utterly unworthy of his position. And all communications made by parents should, when they request it, be regarded as strictly confidential.

The examination of the schools the past term have been unusually satisfactory ; taken as a whole they have never appeared to be in so good a condition. The highest and constant aim of the best teachers has been to develop the youthful faculties by easy and natural processes by which thought and expression are early united in the mind of the child. Oral instruction and object teaching to a limited extent have been successfully employed. In the hands of skillful teachers these methods have great value in quickening the perceptive powers and in giving clear and vivid ideas.

There is, however, a very marked difference between the best and the poorest schools of the same grade. This difference, however, is not always to be attributed to the inefficiency of the teachers ; but often to the unfavorable circumstances with which these schools are surrounded.

The teachers, with but few exceptions, now employed in our city, are competent, earnest and faithful in their



work, and are justly entitled to the confidence and respect of the whole community. It is manifestly unjust to judge of a whole class by the incompetence or short comings of a few. There is no profession in which there will not be found a limited number who have entirely mistaken their calling.

Few are aware of the duties and vast responsibilities of teachers. There is no class or profession that in such an eminent degree shapes and determines the destiny of the future. The seed sown on youthful soil will in after life produce its rich fruitage, but whether it shall be that of firm and noble character or the very opposite will depend largely upon the kind of seed sown and upon those who scatter it.

There never has been a time when greater vigilance, both on the part of parents and teachers, was needed to guard and protect our youth from the perils that beset them on every side. The fuel for youthful passions now abounds, and is presented in almost every conceivable form. The most seductive and insidious arts are employed to entrap the thoughtless and unwary and to entice them into the paths of vice.

The sanitary condition of our schools is also of vital importance, and should receive the thoughtful consideration of every true friend of education. To develop and invigorate the mental faculties at the expense or to the neglect of the physical energies, is neither wise nor humane. An education without bodily vigor is of little worth. In all true culture there is a harmonious devel-

opment, both of mind and body. That there is now in many of our youths, especially in the girls, a want of physical stamina capable of enduring the toils and hardships of life, is painfully evident to all who are interested and careful observers of youthful progress. The causes of the increasing evil should be traced out and examined with such careful observation and sound judgment as the best skill and largest experience can supply. We want well-authenticated facts, and we should ascertain as far as possible how much this diminution of youthful vigor is to be attributed to our schools, and how much to the neglect of proper home culture.

We have now 84 schools, with 269 teachers, and 12,828 pupils. There is one high school with sixteen teachers and 528 pupils. Eleven grammar schools with 88 teachers and 3,761 pupils. Thirty-four intermediate schools with 69 teachers and 3,232 pupils, and thirty-eight primary schools with 96 teachers and 5,807 pupils.

The average number of pupils to a teacher in the high school is 33, in the grammar schools omitting the principals is nearly 49, in the intermediate schools is nearly 48, and the primary schools over 55 to a teacher, making an average of over fifty pupils to a teacher in the grammar, intermediate and primary schools.

All of which is respectfully submitted.

DANIEL LEACH,  
*Superintendent of Schools.*

## REPORT ON EVENING SCHOOLS.

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*To the School Committee of the City of Providence :*

The Standing Committee on Evening Schools present this their annual report for the year 1878-9.

Pursuant to the vote of June 28th last, your Committee made application to the City Council for authority to establish nine ordinary schools, and one higher school for instruction in the more advanced English branches and in mathematics. In response thereto the City Council authorized the nine ordinary schools but declined to authorize the other.

Early in October, your Committee voted to open the several schools at the following places, viz :—Orms street, West River street, Meeting street, Front street, Elm street, and Oxford street, school-houses ; Unity Hall, Olneyville ; and Harrison street and America street chapels ; and nominated 106 teachers, who were subsequently appointed by the Committee on Qualifications, as by by-law required. The schools commenced on the evening of October 28th, and con-

tinued—with an intermission of the two weeks covering the winter holidays—until the evening of March 7th, thus making a term of seventeen weeks.

The whole number of scholars registered was 2,250, of whom 1,714 were boys and 536 girls. The average attendance was 1,048, or between 46 and 47 per cent. of the number registered. The total number of teachers employed was 108, of whom 13 were discharged as the attendance fell off. The entire cost of the schools was \$11,899.28, of which \$9,406 were paid for teachers' salaries, \$1,120.02 for rent and janitors' services, \$777.75 for fuel and gas, \$167.27 for books and stationery, and \$428.24 for repairs and other necessities incurred in and expended by the Department of Public Buildings.

The work of the winter compares favorably with that of other winters, as shown by the table of comparative results subjoined. The order was generally good. Marked improvement was made by many in all the schools. A much larger number of unofficial visitors was recorded, and more frequent official visits were made by the members of the Committee. It has been the settled policy of the Committee to re-nominate the teachers of preceding winters when found faithful and efficient, and it was a source of gratification to be able to secure the services of so many of them, and to note their interest in their old pupils and the reciprocating courtesy and attachment of the pupils to their old teachers.

The recess of two weeks in the middle of the term

was an experiment, and did not realize the anticipations of the Committee and does not commend itself for repetition. Prior thereto the attendance was large and comparatively regular, but all the schools re-opened with materially diminished numbers, and it was two or three weeks before the attendance of the latter part of the first half of the term was even approximately restored. Large numbers of the pupils seemed to have lost their interest in the schools and in their studies by the long interruption—a result doubtless in part chargeable to the long spell of weather unusually favorable for out-door sports, but chiefly to the untrained habits of the pupils.

The term was three weeks shorter than for several winters past, and was shortened to keep within the reduced appropriation and to meet the views of some members of the City Council who believed that a shorter term would result in a larger and steadier attendance. The observation of your Committee, no less than the tabulated statement given below, does not justify the wisdom of the change, and your Committee are of the opinion that the term of twenty weeks, fixed by the experience and wisdom of many committees, will produce as good a showing in the average attendance as any considerably shorter one, and that it is clearly the interest of the city as well as its duty to its poor, whose children are unable to attend the day schools, to continue the evening schools until there is a sensible falling off in the rest of the scholars.

The failure to re-establish the higher school was a source of regret to your Committee and a great disappointment to a large number of scholars, many of whom had been connected with it in previous winters, whose circumstances had deprived them of the superior advantages of the day schools. The Committee feel that the slight saving to the city treasury by the abandonment of this school will prove a poor compensation for the disappointment so caused, and for the loss to the city sure to result from thus withholding from its young apprentices and mechanics the earnestly sought opportunities for improvement in the mechanic arts afforded by this school.

It is to be regretted that the claims of our evening schools are not sufficiently understood and recognized to secure for them suitable accommodations. The large halls or rooms in which they are for the most part required to be held, when crowded as they usually are with scholars like those of which the evening schools are made up, are unfavorable to large results. It is impossible under the most favorable conditions of such schools even to approximate the classification held to be so essential to the efficiency of our day schools; yet if the apartments were so arranged, by reducing the number of pupils to a room to such limit as to make it possible to secure even the classification attainable in such schools, your Committee feel sure that much greater good would be accomplished at a greatly reduced cost.

If some plan could only be devised to induce the members of the city government to visit the schools and become interested in them, and so learn their workings and needs, we might look for that generous support to which their importance and the great good they work entitle them.

Your Committee recommend that application be made to the City Council for the establishment of the same number of schools for a term of twenty weeks, in or near the same localities for the ensuing season as in the last, to wit: nine ordinary schools, and for the re-establishment of the higher or polytechnic school.

All which is respectfully submitted for the Committee.

E. C. MOWRY, *Chairman.*

ELISHA C. MOWRY,

HENRY A. HOWLAND,

JOHN W. CASE,

FREEBORN COGGESHALL,

GILBERT E. WHITTEMORE,

OREN WESTCOTT,

JOSEPH F. BROWN,

*Committee.*

TABLE ACCOMPANYING REPORT OF COMMITTEE ON EVENING  
SCHOOLS FOR THE YEAR 1878-9.

| SCHOOLS.           | PRINCIPALS.         | NO. REGISTERED. |        |        |               | No. Teachers in-<br>cluding Principal<br>at Commencement. | No. Teachers in-<br>cluding Principal,<br>retained. |
|--------------------|---------------------|-----------------|--------|--------|---------------|---|---|
|                    |                     | Boys.           | Girls. | Total. | Aver-<br>age. |   |   |
| America Street.... | H. C. Peirce.....   | 281             | 97     | 328    | 167           | 16  | 16  |
| Olneyville.. .. .  | C. H. Johnston....  | 306             | 65     | 371    | 163           | 15  | 14  |
| Elm Street.....    | D. S. Baker, Jr.... | 240             | 83     | 323    | 129           | 13  | 11  |
| Harrison Street... | C. A. Aldrich.....  | 162             | 69     | 231    | 126           | 13  | 12  |
| Front Street.....  | H. S. Babcock....   | 187             | 56     | 243    | 125           | 10  | 10  |
| Meeting Street.... | R. B. Comstock..    | 169             | 71     | 240    | 117           | 15  | 13  |
| West River Street. | Irving Champlain.   | 181             | 28     | 159    | 86            | 10  | 7   |
| Oxford Street....  | F. W. Bliss.....    | 115             | 34     | 149    | 77            | 10  | 7   |
| Orms Street.....   | Jencks Mowry....    | 173             | 33     | 206    | 58            | 6   | 5   |
| Total . . . . .    | .....               | 1,714           | 536    | 2,250  | 1,048         | 108   | 95  |

| Year.   | Total<br>Enrollment. | Average<br>Attendance. | Per<br>Ct. | Sum expended<br>for Salaries. | Cost per<br>Scholar<br>according to<br>average for 20<br>Weeks. | Cost per<br>Scholar ac-<br>cording to<br>registry for<br>20 Weeks. |
|---------|----------------------|------------------------|------------|-------------------------------|---|--|
| 1872-73 | 2,566                | 900                    | 35         | 9,454 50                      | \$10 55   | \$3 68   |
| 1873-74 | 2,074                | 835                    | 40         | 9,662 45                      | 11 59   | 4 66   |
| 1874-75 | 2,228                | 993                    | 44         | 10,024 50                     | 10 09   | 4 54   |
| 1875-76 | 2,110                | 970                    | 45         | 11,959 50                     | 12 30   | 5 66   |
| 1876-77 | 2,351                | 1,040                  | 44         | 12,367 90                     | 11 89   | 5 26   |
| 1877-78 | 2,693                | 1,302                  | 49+        | 14,936 50                     | 11 49+  | 5 54+  |
| 1878-79 | 2,250                | 1,048                  | 46+        | 9,406 00                      | 10 55   | 4 91   |



## REPORT OF COMMITTEE ON HEALTH AND VENTILATION.

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### *Gentlemen of the School Committee :*

The Committee on Health and Ventilation have repeatedly reported that a number of the school houses in this city, are unfit for the purposes for which they are used, and they have also strenuously recommended that their condition be improved, by having ventilating apparatus similar to that in the East street school house, placed in all of them, that the pupils and the teachers may have the benefit of pure air, during school hours, but nothing has been done.

The report of the Committee of the "Providence Medical Association," on School Hygiene, which was presented to this body some time ago, it is to be regretted there was no time to consider the same, as it treated of matters of importance in relation to our Primary Schools.

A Committee of medical gentlemen of this city published an article upon "Hygiene in the School-room" a short time since, and they state that, in their delibe-

rate opinion, many obscure disorders of children, many of the headaches and feverish flushes to which children are martyrs, are directly chargeable upon an improper supply of pure air in our school-rooms; and they could not speak too strongly in favor of the adoption of any efficient means of ventilating these hot houses for immature brains,—a thorough system of ventilation is vitally necessary. And they also state that the method applied in the East street school house combines more valuable features than any other which had fallen under their notice; it therefore gave them great pleasure to express their hearty approval of this system, and an earnest hope, that the authorities would no longer delay to give the children pure air, when the means are so readily to be obtained. They believe as medical sanitarians, that were every school-room in the city ventilated in this way, the health of the scholars would be greatly the gainer.

The crowded condition of some of our primary schools, and the foul air which the children are obliged to breathe, is, to state it mildly, outrageous. In the Friendship street lower primary room, 101 pupils have been registered during the last term, with an average attendance of 85, and with seats for 54. In the old Federal street primary lower room, 120 scholars have been registered, with seats for 96; the Carpenter street and the Ring street lower rooms are both in about the same ratio. Here are three schools within a radius of

less than a quarter of a mile, with about 60 pupils, sitting on settees, platforms, or hanging by the eyelids.

It is no fault of the School Committee, that such a state of things exists. Time and time again have they asked for increased accommodations, to relieve the primary schools in the third district, but without avail.

The question naturally arises, how long is this state of things to continue? One would suppose that when the attention of the authorities had been called to matters of such vital importance as those alluded to in this report, that no time would be lost, but that they would be attended too at once ; especially where there was no real difficulty in the way. The outlay would be small, and the expense, when governed by the necessity of the case, ought not to be considered. The old adage, "an ounce of prevention is worth a pound of cure," is pregnant with practical common sense, and is peculiarly applicable in connection with the welfare and usefulness of our schools.

Respectfully submitted,

H. H. BURRINGTON, *Chairman.*



# WRITTEN EXAMINATIONS.

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## HIGH SCHOOL.

### CLASSICAL DEPARTMENT.\*

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#### EXAMINATIONS IN GREEK.

##### HARKNESS'S FIRST GREEK BOOK.

###### I.

1. Inflect pres. act. part. λέγω, masc. and fem.
2. Prin. parts νικάω; ποιέω?
3. Syn. pres. mid. syst. νικάω?
4. Syn. pres. mid. syst. ποιέω?
5. Syn. pres. act. syst. δηλόω?
6. Inflect pres. ind. act. νικάω; imperf. act. ποιέω.
7. Inflect. pres. ind. mid. ποιέω; pres. subj. mid. δηλόω.
8. Give infinitives mid. and pass. λέγω; endings of cases of masculines of decl. 2.
9. Translate: τίς τὰς τοῦ κριτοῦ οἰκίας ἐποίησεν;
10. Translate: For whom had the judges constructed a house?

###### II.

1. Γυνή τις καλὴν ὄρνιν ἔχουσα ἑαυτῇ ἔλεξεν. Αὕτη ἡ ὄρνις ἐν ᾗ τῖται μοι ἐκάστη ἡμέρᾳ· ἐὰν δὲ πλείω κριθὴν αὐτῇ παραβάλλω,

\*Specimens of examinations held during the school year, 1878-9.

πλείω ὥὰ τέξεται μοι. Τῆς δὲ γυναικὸς ταῦτα ποιησάσης ἡ ὄρνις  
 πιμελὴς ἐγένετο ὥστε ὥὰ τίχτειν μὴ δύνασθαι. Καὶ ἡ γυνὴ τὴν  
 ὄρνιν ἔκτεινέ τε καὶ ἔφαγεν· ὥστε ἐκείνη ματαία γενομένη ὥὰ οὐκ  
 εἶχεν, ἡ δὲ ὄρνις ἀπέθανεν.

2. What form of conditional sentence? Change to next form,  
 with meaning in English. Explain difference in moods with ὥστε.  
 Explain difference in tenses of last two verbs.

3. Write all the enclitics in the passage; all the proclitics.

4. Write the next form of the first ten words.

5. Synopsis ἔχουσα? Prin. parts ἔλεξεν?

#### XENOPHON'S ANABASIS.

#### BOOK I.

#### I.

1. Ὁ μὲν Κῦρος ὑπὸ τοῦ πατρὸς σατράπης ἐπεποιήτο· ἐπεὶ  
 δὲ ἐτελεύτησε Δαρεῖος καὶ ὁ πρεσβύτερος παῖς αὐτοῦ κατέστη εἰς  
 τὴν βασιλείαν, Κῦρος ἐπεβούλευε τῷ ἀδελφῷ, καὶ ἡ μήτηρ ὑπῆρχε  
 τῷ νεωτέρῳ παιδί. Καὶ ὁ Κῦρος ἠθροίζεν ὅτι πλείστους βαρ-  
 βάρους τε καὶ Ἑλλήνας ὡς πολεμήσων Τισσαφέρνει. Κλεάρχῳ δὲ  
 Λακεδαιμονίῳ χρήματα ἔδωκεν· ὁ δὲ λαβὼν στράτευμα συνέλεξε  
 καὶ ἐπολέμει τοῖς Θρᾷξι· ὥστε τοῦτο τὸ στράτευμα ἐλάνθανε  
 τρεφόμενον Κῦρῳ.

2. Prin. parts first five verbs?

3. Synopsis of tense system of ἐπεποιήτο, ἐτελεύτησε,  
 ἐπεβούλευε, πολεμήσων, λαβὼν?

4. Inflect first four verbs and ἔδωκεν.

5. Genit. sing. and nominat. pl. Κῦρος, παῖς, μήτηρ,  
 βαρβάρους, στράτευμα?

#### II.

1. Ἐπεὶ Κῦρος ἐστρατεύετο ἐπὶ τὸν ἀδελφόν, μετεπέμψατο  
 τοὺς τῶν Ἑλλήνων στρατηγούς· οἱ δὲ παρεγένοντο αὐτῷ εἰς  
 Σάρδεας ἔχοντες τοὺς ὀπλίτας καὶ τοὺς πελταστας. Καὶ ἀπὸ

Σάρδεων ἐξήλασε διὰ Ἀσίας εἰς Ταρσοῦς, πόλιν μεγάλην τῆς Κιλικίας οἰκουμένην ἐπὶ τῷ Κύδνῳ ποταμῷ. Ἐν ταύτῃ τῇ πόλει ἦν τὰ βασίλεια τὰ τοῦ τῆς χώρας βασιλέως· οἱ δὲ Κύρου στρατιῶται δῆρπασαν τὰ βασίλεια τε καὶ πῦσαν τὴν πόλιν, ὀργιζόμενοι δι' ἐκατὸν τῶν συστρατιωτῶν ἐν τοῖς ὄρεσι κατεκόπησαν, ὥς ἐλέγετο, ὑπὸ τῶν Κιλικίων.

2. Analyze ἐστρατεύετο, παρεγένοντο, ἔχοντες, ἐξήλασε, κατεκόπησαν.

3. Class, verb stem, and present stem, of ἐστρατεύετο, ἐξήλασε, δῆρπασαν, κατεκόπησαν? Explain aug. and redup. in ἐξήλασε.

4. Account for difference in tense in first two verbs; for difference in cases with ἐπὶ. Ταύτῃ τῇ πόλει, what other order? If τὰ be omitted after βασίλεια, what further change would be necessary? Subject of ἐλέγετο?

5. Synopsis ἐστρατεύετο, μετεπέμφατο, παρεγένοντο, ἔχοντες, οἰκουμένην?

### III.

1. Ἐπεὶ οἱ μετὰ Κύρου Ἕλληνες ἀφίκοντο πρὸς τὸν Εὐφράτην ποταμὸν Κύρος μεταπεμφάμενος τοὺς στρατηγούς αὐτῶν ἔλεξεν αὐτοῖς ὅτι στρατεύοιτο ἐπὶ τὸν ἀδελφόν. Οἱ δὲ στρατιῶται οὐκ ἠθελον διαβαίνειν τὸν ποταμὸν, πρὶν Μένων ἱππείσει τοὺς αὐτοῦ στρατιώτας καὶ αὐτοὺς διέβησε τὸν ποταμόν. Τότε δὲ οἱ ἄλλοι Ἕλληνες ἔσποντο Κύρῳ καὶ διέβησαν σὺν αὐτῷ. Καὶ πλοίοις μὲν οὐκ ἐχρῶντο, ἀλλὰ πεζῇ διέβησαν. Οἱ δὲ παρὰ τῷ ποταμῷ οἰκοῦντες ἔλεγον ὅτι ὁ ποταμὸς οὗτος, εἰ μὴ τότε, πλοίοις διαβατέος εἴη, καὶ ὅτι τὰ πλοῖα ὑπὸ Ἀβροκόμα κατακαυθεῖν δεῖ· προσήκει τῷ Κύρῳ.

2. Explain form, as affected by position, of ἔλεξεν and οὐκ. Explain ω in ἐχρῶντο, ου in οἰκοῦντες, ψ in μεταπεμφάμενος.

3. Quantity of ε in ἀφίκοντο, α in διέβησαν? Explain η in ἠθελον and in διέβησε. What peculiarity in Ἀβροκόμα?

4. What other order for τοὺς στρατηγούς αὐτῶν; ὁ ποταμὸς

οὗτος? Account for mood of *στρατεύοιτο*. What other construction might be used with *πρίν*, and with what difference in meaning? Construct from *λέγω* a form kindred with *διαβατέος*.

5. Prin. parts with synop. of tense syst. of *ἀφίκοντο*, *μεταπεμφάμενος*, *ἔλεξε*?

#### BOOK VI.

1. Translate V., 15, 16, 17.

2. Explain form, as affected by position, of *οὕτως*, *οὐκ*, *ἔστιν*, *ἔοικε*, *οἷδ'*?

3. Give the ending of *ἴωμεν*, *ἔφονται*, *ὀρᾶτε*, *ἵεναι*, *ἀνδρας*.

4. Give the stem of *ἔστιν*, *ἴωμεν*, *ἔφονται*, *ὀρᾶτε*, *θάρρος*.

5. Where are found *ἦν*, *ῆν*, *ῆν*, *ῆ*, *ῆ*?

#### BOOK VII.

1. Translate I., 1—4.

2. Difference between *μετὰ Κύρου* and *σὺν Κύρῳ*? *Μάχης*, what battle? *Εκπλέοντες*, explain peculiarity in contraction. *Στράτευμα*, form a similar derivative from *ποιεῖν*. Account for mood of *στρατεύηται*. Would any other form be as correct, and what form? Quantity of ult. of *πέμψας*, and why? *Πρὸς Ἀναξίβιον*, explain separate force of prep. and of case-ending. *Ὁ δέ*, where is the anteced. regularly to be found? *Διαβράσαι*, quantity of *α*? Give the other forms spelt the same.

Point out the difference between Greek idiom and Eng. in *φοβούμενος τὸ στρατ. μὴ κτλ. ἔτυχεν ὦν*.

Change to Direct Disc. *ποιήσιν ... δέοι· διαβαῖεν ... ἔσεσθαι· ἀπαγγελεῖν· ἀπαλλάττειν ... βούλοιο· ποιήσιν*.

Discriminate *οἶ*, *οἷ*, *οἷ* · *εἶς*, *εἷς*, *εἷς*.

#### HOMER'S ILIAD.

1. Translate III., 67—78.

2. Scan 69; prove third foot; name of last two feet?

3. Attic prose for *μέσσω*; *ὀπότερος*; *κέ*; *ῶς*; *ἐφαθ'*?



4. What form of condition in 67? Account for mood of *ναίσῃ*. Future of first four verbs? Compare *χρείσων*.

5. Derivation of *πολεμίζειν*; *συμβάλλειν*; *κτήμασι*; *νικήσῃ*; *φιλότιτα*?

#### GREEK COMPOSITION.

Darius, the King of the Persians, had a clever son, Cyrus. When the father fell ill and was anticipating his end he sent for his son, who was in Lydia, a province of which he had been appointed Satrap. Accordingly Cyrus went up to Babylon, taking with him his friend Tissaphernes. While Cyrus was there his father died, and the elder son, Artaxerxes, ascended the throne. Cyrus and his mother were vexed that the elder brother was king, but Cyrus a vassal, and Cyrus was accused by his friend of plotting against his brother in order to put him to death. Artaxerxes, convinced by Tissaphernes, arrested Cyrus, but at the intercession of his mother sent him back to his province.

#### EXAMINATIONS IN LATIN.

##### SALLUST'S CONSPIRACY OF CATILINE.

1. Translate XL., *Postquam illos to liberare*.
2. How many entire sentences in the above passage? What is the principal verb of the first? What of the second?
3. Explain the case of *illos*, *auxilii*, *nihil*, *sui*.
4. Explain the mood of *esset*; *facturi essent*.
5. Write as indirect discourse dependent on *inquit* the direct quotation, "*At ego—effugiatis.*"

##### CICERO'S FIRST PHILIPPIC.

1. Translate VI., *Ego vero to Qua quidem*.
2. Explain how the name of the month is introduced into a Latin date. Give the English date for *a. d. xix. Kal. Jan.*; *prid. Kal. Jan.* Write the Latin for the day preceding each of these.

3. Explain gender of *quae*; *ordini*; *invitus*; *malis*; *quod*.
4. Gen. pl. *me*; *gravior*; *casus*; *immortales*; *potestas*?
5. Change first ten finite verbs from indicat. to subjunc. or vice versa.

#### OVID'S METAMORPHOSES.

1. Translate XV., 626—43.
2. Name last three feet in 629, and state in what other part of the line each may occur.
3. Etymology of *pallida*; *exsanguis*; *mortalia*; *temptamenta*; *auxilium*?
4. Mention some peculiarity in *cernunt*; *nihil*; *humum*; *locus*; *laurus*.
5. *Salutifera*, masc. nom. sing. and gen. pl.? Compare *miseris*. Prin. parts *intremuere*; *pavefacta*? Inflect *ite*.

#### VIRGIL'S AENEID.

1. Translate VIII., 121—137.
2. Construct an hexameter from initial words.
3. Genit. sing. *Pallas*, *penatibus*, *Grajugenum*, *Arcas*, *Atridis*?
4. Change 122 and 123 to Ind. Disc. after *dixit*.
5. Give same person of plural for *egredere*, *ait*, *succede*, *fores*, *advehitur*.

#### LATIN COMPOSITION.

##### EXERCISES IN CAESAR.

##### I.

Three peoples are inhabitants of Gaul. The Belgians who are the bravest of these dwell toward the north and are nearest the Germans. Toward the west are the Aquitanians, and between these two dwell the Gauls, or the Celts, as they are called in their own language.

The Helvetians, who inhabit the central section, and the Belgians,

who are very war-like, fight in almost daily battles with their neighbors, the Germans.

Three rivers, the Garonne, the Seine, and the Marne divide these peoples, and the boundaries of all Gaul are the Ocean, the river Rhine, the Roman province, and the Pyrenees mountains.

## II.

Caesar saw that if the horses of all were removed out of sight the danger of all would be equalized and the hope of flight would be taken away. He ordered this to be done, and after exhorting his soldiers began the battle. By the discharge of their javelins the Romans broke the line of the enemy, and drawing their swords made a charge upon them. When one of the Roman javelins had pierced at a single blow several of the shields of the Gauls and pinned them together, it proved so serious an embarrassment to the Gauls that many of them preferred to let go their shields and fight with their bodies unprotected. At last they began to retreat to a mountain about a mile distant.

## CICERO.

### I.

Catiline had abused the patience of all good men. His unbridled audacity had displayed itself without limit. At length, Cicero, one of the consuls, convoked the senate in a very strongly fortified place, the temple of Jupiter Stator. On the previous night, Catiline, since the city watches and the fear of the citizens did not at all disturb him, had taken counsel with his friends to destroy Rome. Yet he came into the senate, although the senators all knew where he had been, and what he had been doing. It was at this time that Cicero delivered his celebrated first oration against Catiline, and told the enemy of his country that his conspiracy was held in check by the measures adopted by the consuls.

## II.

Even if Rome had had any citizen who seemed likely to conquer the enemy, he would not have been a suitable general to send to Asia, unless he had been able to keep his hands off the money of the allies. At that time, no states which were tranquilized were rich; no state which was rich was considered tranquilized. The Roman commodores were seen to be accomplishing nothing with the public funds, except that they were enriching themselves. Rome was yearly experiencing disasters and was visited with disgrace. Under these circumstances Pompey was sought to take charge of the war in Asia. He was characterized by self-control of disposition as well as by glory in military affairs.

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## EXAMINATIONS IN FRENCH.

## I.

Translate: 1. Are you going to sing? I am. 2. Have you not just been talking? I have. 3. Who is to buy the bread? You are. 4. Have they bread? They have. 5. Have you read that book? I have. 6. Has your father arrived? He has. 7. Are you warm enough? I am. 8. Will he give it to me? He will. 9. Will they be at home? They will. 10. Shall you give me some? I shall. 11. Will you give me some? I will. 12. Is he a Frenchman? He is. 13. Was it you who did that? It was. 14. Why do you not study? I do. 15. Does your brother? He does not, but he will. 16. You must have seen that when you were there. 17. I was to go away but I did not. 18. I was going to say that myself. 19. Will you not sit down? 20. I was going to when you spoke.

## II.

1. Calypso ne pouvait se consoler du départ d'Ulysse. Dans sa douleur elle se trouvait malheureuse d'être immortelle. Sa grotte ne résonnait plus de son chant; les nymphes qui la servaient n'osaient lui parler. Elle se promenait souvent seule sur les gazons fleuris dont un printemps éternel bordait son île; mais ces beaux lieux, loin de modérer sa douleur ne faisaient que lui rappeler le triste souvenir d'Ulysse, qu'elle y avait vu tant de fois auprès d'elle. Souvent elle demeurait immobile sur le rivage de la mer, qu'elle arrosait de ses larmes, et elle était sans cesse tournée vers le côté où le vaisseau d'Ulysse, fendant les ondes, avait disparu à ses yeux.

2. Inflect Pres. and Pres. Perf. Ind. *se consoler*. Synop. Ind. *pouvait, être, fusaient, avait vu?*

3. Pl. of *du départ, sa douleur, son chant, le triste souvenir, le vaisseau*; sing. of *les nymphes, les gazons fleuris, ces beaux lieux, ses larmes, ses yeux?*

4. What is elided after *qu'*? French for: She whom he had seen. She who had seen him. The women she had seen. The men he had seen.

5. Masc. and fem. *malheureuse, immortelle, seule, fleuris, beaux?* French for: He was turned. The nymphs were turned. Waves, beautiful waves, are disappearing.

## ALGEBRA.

1. Remove signs of aggregation and combine, in following expression:  $7a - \{ 3a - [4a - (5a - 2a)] \}$

2. Why does a negative quantity multiplied by a negative quantity give a positive result?

3. Factor  $7lm^2n - 28l^2mn^2 + 42l^3mn$  and  $\frac{25}{m^2} - \frac{40}{mx^2} + \frac{16}{x^4}$

4. Simplify  $\frac{\frac{3x}{2} + \frac{x-1}{3}}{\frac{13}{6}(x+1) - \frac{x}{3} - 2\frac{1}{2}}$

5. State a rule for writing the first trial divisor and also for completing it in the extraction of the fifth root.

6. Add the quantities

$$\sqrt{\frac{2}{3}}, \sqrt{\frac{1}{3}}, \frac{1}{2}\sqrt{3}, \frac{1}{3}\sqrt{27}, \frac{1}{4}\sqrt{\frac{2}{15}}, \sqrt{3a^2+6ab+3b^2}.$$

Also multiply the same together.

7. Solve  $2.1y - \frac{5.2y-17.2}{.5} = 5.35.$

8. A privateer running at the rate of 11 miles per hour, discovers a ship  $22\frac{1}{2}$  miles off running at the rate of 6 miles per hour; how many miles can the ship run before it is overtaken?

9. Find a number  $p$  times which increased by  $q$  exceeds  $t$ , as much as the number itself is below  $s$ ?

10. Solve  $z + \sqrt{z^2 - \sqrt{2-4z}} = 1.$

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#### EXAMINATION OF FOURTH CLASS FOR PROMOTION.

1. Tell all you can about the Peloponnesian war—its causes, character, extent and results.

2. In what spirit did Rome enter upon the third Punic war?

3. How did Augustus come to be emperor?

4. Factor  $4x^2 - 12xy + 9y^2$ ;  $25a^6 - 36b^4$ ;  $a^4 - a^3y^2 + a^2y^3 + ay^4$ ;  $2a^2b^3y^2 - 2ab^4y^3$ ;  $3a^2 + 6ab + 3b^2$ .

5. Multiply  $\frac{b^2 - y^2}{2x}$  by  $\frac{2b}{b+y}$

6. Affect with the exponent  $\frac{2}{3}$  the following expression :

$$32a^{10}b^5c^{\frac{2}{3}}d^{-\frac{1}{4}}$$

7. Solve  $\frac{3(x-1)}{5} + \frac{2(x-2)}{15} = \frac{2(2-x)}{3}$

8. Write in Latin :—Country is dear to all. Cicero was more learned than Cato.

9. Give rule for Dat. of advantage and disadvantage.

10. Write in Latin :—Tarquin came into Italy. Plato came to Tarentum.

11. Write in Latin :—We were in Greece. We are in Rome. We had been in Corinth. We shall be in Athens. We might have been in Spain.

12. Translate Caesar's Commentaries, Book I., Chapter II., through *potiri*.

13. Inflect all the nouns in the first four lines.

14. Give synopsis of mood in same person and number of all the finite verbs.

15. Compare all the adjectives.

16. Explain each subjunctive.

17. Explain case of *consulibus*, *nobilitatis*, *civitati*, *virtute*, *imperio*.

18. Change *perfacile*—*potiri* to direct discourse.

19. Translate first sentence of Chap. VII.

20. Translate first sentence of Chap. X.

## ENGLISH AND SCIENTIFIC DEPARTMENT.

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### POLITICAL ECONOMY.

1. Define political economy, wealth, the mercantile system, free trade, and unproductive consumption.
2. What two motives produce a desire to save? What influence does security of property have upon the increase of capital?
3. Distinguish between price and value. In what way can these terms be applied to money?
4. What circumstances influence the demand for money?
5. Is rent a part of the price of agricultural produce? with proof.
6. How do charitable donations often affect the operation of competition, and the true interests of the community?
7. How can the rate of interest in any country at any particular time be ascertained? Why does the rate of profit vary in different trades?
8. In what ways is foreign commerce an advantage to a nation?
9. What is credit? What effect does it have upon prices, and why? Upon what class of commodities does it produce the greatest effect?
10. Enumerate Adam Smith's four canons of taxation. What is a direct and what an indirect tax?

### ENGLISH LITERATURE.

1. What races have had to do with the formation of the English language? Give a fuller account of the Norman influence.



2. Describe the works of note written between the Conquest and the time of Chaucer. Why are they of value at the present time?

3. Give the full names and works of the poets of the fourteenth century. Give the plan of one work.

4. Name five dramatists of the Elizabethan age, and give two prominent works of each. Give a very brief description of one of Shakespeare's plays.

5. Write a sketch of the life of Dryden, and describe the different kinds of works which he wrote.

6. Describe the works of Addison.

7. What is a novel? Name two works of each of the first five great English novelists.

8. Describe the style of Dr. Samuel Johnson.

9. Give a sketch of the life and works of Macaulay.

10. Name the author of each of the following works, state the department of literature to which it belongs, and the century in which it was written:—"Paradise Regained," "Pilgrim's Progress," "Faery Queen," "Essay on the Human Understanding," "Essay on Criticism," "Drapier Letters," "Progress of Poesy," "Deserted Village," "David Copperfield," and "Utopia."

#### ENGLISH ETYMOLOGY.

Give the derivation, history, and present meaning of the following words:

1. Autobiography.

9. Homely.

2. Bedlam.

10. Jovial.

3. Carnelian.

11. Lancaster.

4. Conclave.

12. Misanthropic.

5. Disaster.

13. Ostracism.

6. Essex.

14. Photograph.

7. Fathom.

15. Scapegoat.

8. Gas.

16. Stentorian.

17. Wednesday.

17. What is the meaning of the suffix *er*? Apply it to *pay*, *supply*, *heat*, *garden*, and *transmit*, with rules for spelling.

19. Give the rule for spelling the derivatives of words ending in silent *e*, when the suffix commences with a vowel. Give examples and exceptions.

20. Give the meanings of the following prefixes: *pre*, *super*, *un*, *ante*, and *post*, with examples.

#### GEOLOGY.

1. Describe garnet, dolomite, fluor spar, onyx, and asbestos.

2. Describe porphyry, travertine, gneiss, conglomerate, and öölite, and state the class of rocks to which each belongs.

3. Define articulates, and give the classes into which they are divided. In what age have the earliest remains of each class been found? What noted articulate fossils have been found, and in what age?

4. What Paleozoic and Mesozoic rocks are found in New England, and where are they located?

5. Name the periods and kinds of rock found in the Devonian age.

6. What is said of the climate and atmosphere of the Carboniferous age?

7. Name the ages and periods of the Cenozoic time, American and foreign. What special effects of glaciers in Rhode Island?

8. Describe each of the following, state the class to which it belongs, and the age in which it existed:—Archimedes, Graptolite, Mosasaur, Orohippus, and different kinds of Ammonites.

9. Compare Mount Loa and Vesuvius as to causes of eruption and nature of the mountains.

10. Describe estuary and delta formations.

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SECOND CLASS.

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## ASTRONOMY.

1. Define declination, altitude and celestial latitude. Find the two latter from the globe for Vega at ten o'clock this evening.
2. Describe the electro-chronograph?
3. Give the names of the signs of the zodiac in order, with approximate date when the sun enters each. State, also, when the sun is at each solstice, and each equinox?
4. What are the real and the apparent diameters of the sun and moon? What would be the apparent diameter of the sun if its surface were as near to us as that of the moon?
5. Explain the librations of the moon.
6. In what parts of the earth are the tides highest, and why? Define spring and neap tides.
7. Give the diameter of Jupiter and its distance from the sun. Calculate the greatest elongation of the earth as seen from Jupiter.
8. Describe Saturn.
9. Define comets, fixed stars, the milky way, diurnal parallax, and annual parallax.
10. Describe Virgo and Cygnus.

## CONSTITUTION OF THE UNITED STATES AND RHODE ISLAND.

## QUESTIONS.

1. What is a nation? State in full the distinction between a nation and a government, and between the constitution of a nation and that of a government.
2. Describe the royal or provincial form of government. What colonies had provincial governments at the time of the Revolution?
3. Give the qualifications prescribed in the Constitution for

Presidents, Senators, and Representatives, respectively; the provisions in the Constitution for the compensation of Presidents and Judges, and the term of office of each of these officers.

4. Write Art. II., Sec. 9, Cl. 5. [Duty on exports.]
5. Write and discuss Art. II., Sec. 1, Cl. 2. [Appointment and qualifications of electors.]
6. What is meant by "Executive Session," and what powers are exercised therein?
7. Write Art. IV., Sec. 4. [Republican form of government.]
8. Write and discuss Art. VI., Cl. 2. [Supreme law.]
9. Name in full in what ways a native citizen, and in what ways a naturalized citizen, may become a voter in Rhode Island.
10. Give the provisions for the House of Representatives in the Constitution of Rhode Island.

#### CHEMISTRY.

1. Why are bromine, iodine, and phosphorus so named? Which of these are considered halogens? Give chemical name and formula of a binary and a ternary compound of each.
2. Define allotropism, isomerism, amorphism, atom, and molecule, with examples.
3. Calculate the number of pounds of saltpeter required to make sixty pounds of nitric acid. The same for Chili saltpeter. How many pounds of sulphuric acid would be required in each case? Which would it be cheaper to use, if the price is the same per pound, and all products are considered waste, except the nitric acid?
4. What gases are most soluble in water? What is the effect of heat and pressure upon the solution of gases?
5. How is  $\text{NO}_2$  made? with equation. Give its properties, volumetric composition, vapor density, and graphic formula.
6. Does chlorine support combustion? Give experiments to prove the principle.

7. State the properties of  $\text{SO}_3$ , and its relation to the true acid. Give tests for the acid in solution, with one equation.

8. Give the names and formulas of five organic acids. Write the formula of one salt of each. Write an equation for making hard soap, and one for making vinegar.

9. Name the most common compounds of iron, with formulas. What other metals belong to the same group, and what are the characteristics of the group?

10. Give the common and graphic formulas, common names (if any), and appearance of the following compounds:—ammonic chloride, ethyl hydrate, mercurous chloride, sodic sulphate, calcic nitrite, calcic hypochlorite, potassic perchlorate, ferric chloride, methyl hydride, and carbonic anhydride.

#### HEAT AND ELECTRICITY.

1. Describe the different kinds of thermometers in common use. Reduce  $25^\circ \text{C.}$  to  $^\circ \text{F.}$

2. Describe Marcet's globe, and state what it proves.

3. What are diathermancy and athermancy? Give examples of each.

4. What is the mechanical equivalent of heat, and how is it obtained?

5. How many thermal units will be required to raise 10 lbs. of lead from  $60^\circ \text{F.}$  to  $1000^\circ \text{F.}$ ? How many pounds of coal must be consumed to accomplish it, if no heat be wasted? [Melting point of lead  $620^\circ$ . Specific heat of lead .03 solid, and .05 liquid. Latent heat of liquid lead  $9.65^\circ$ . One pound of coal produces 14,000 thermal units.]

6. Describe locomotive boilers.

7. Explain the dipping needle and its action in different parts of the earth.

8. Describe different forms of the Leyden jar. For what is each used?

9. How are galvanic batteries arranged for intensity? How for quantity? Draw one which is arranged partly for quantity and partly for intensity.

10. Describe the contracting helix, in full, and give the theory of its action. When do poles attract each other, and when do currents? When are secondary currents produced?

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### THIRD CLASS.

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#### NATURAL PHILOSOPHY.

1. Name ten universal properties of matter. Give an experiment illustrating impenetrability of matter.

2. Define the absolute or kinetic unit of force. Define the dyne.

3. What are (1) a simple pendulum ; (2) a compound pendulum ; (3) the center of oscillation?

4. Define kinetic and potential energies. Illustrate by the pendulum.

5. Name the simple machines, and give the law for the screw.

6. Give three experiments showing, respectively, that liquids exert downward, upward, and lateral pressure.

7. Define specific gravity. How is it determined for solids heavier than water ; and how for liquids?

8. What is meant by the tension of a gas. Illustrate by an experiment. State Mariotte's law for gases. Give an experiment proving the law for pressures greater than one atmosphere.

9. What are the overtones of a musical instrument, and how are they produced?

10. (a) How much pressure is exerted by a power of 75 lbs., acting on a hydrostatic press which has a lever of the second kind three feet long, with piston attached six inches from the fulcrum, a small cylinder of one-half square inch area, and a large cylinder of 100 square inch area? (b) Find what weight will be held in equilibrium by a power of 50 lbs. acting parallel to the length of an inclined plane whose length is 13 feet and whose base is 12 feet.

## TRIGONOMETRY.

1. Find the value of  $\left( \frac{890.63 \times .68 \times .07}{81.1 \times .0073 \times 5} \right)^{\frac{2}{3}}$
2. In the right-angled triangle in which the hypotenuse equals 94.6 feet and the angle at the base  $56^{\circ}30'$ , find the remaining parts.
3. In the plane triangle CDE, the angle  $D=27^{\circ}50'$ ,  $CE=309$ , and  $CD=450$ . Find the remaining angles.
4. In the plane triangle BCD,  $CD=403.7$ ,  $DB=500$ ,  $BC=395.75$ . Find the angle B.
5. State and prove the rule for multiplication by means of logarithms.
6. Define the terms plane trigonometry, complement of an arc, sine, tangent, and secant.
7. Draw an arc with its sine, cosine, tangent, and cotangent.
8. Give completely the method of solving a right-angled triangle: (1) when hypotenuse and perpendicular are given; (2) when base and perpendicular are given.
9. State and prove the method of solving an oblique-angled triangle in which there are given two angles and one side.
10. Give the method of solving an oblique-angled triangle in which there are given two sides and the included angle.

## GEOMETRY.

1. Define the terms geometry, polygon, similar polygons, parallelepipedon, and right pyramid.
2. Define the terms proportion, mean proportional, similar circular segments, cylinder, and frustum of a cone.

3. Write and demonstrate Prop. IX., Book III. A tangent and radius perpendicular to each other.
4. Prop. IX., Book IV. The square of the difference of two lines.
5. Prop. XIV., Book IV. In any triangle, the sum of the squares described on two sides is equal to twice the square of half the third side increased by twice the square of the line drawn from the middle point of that side to the vertex of the opposite angle.
6. Prop. III., Book V. To inscribe a square in a given circle.
7. Prop. XVI., Book VII. A triangular prism divided into three pyramids.
8. Prop. XIV., Book VIII. Volume of a sphere.
9. Find the volume and entire surface of a right cone whose altitude is 20 feet, and the radius of whose base is 10 feet.
10. Find the volumes and entire surfaces of a sphere and circumscribed cylinder, the radius of the sphere being 5.

#### RHETORIC.

1. Distinguish between purity and propriety of diction. State and illustrate why the English language has many synonyms. Give the history of the words *prevent* and *censure*.
2. Name the kinds of sentences and give the general rule for their use. Make periodic the following: "They labored with untiring zeal, confident of success." "He would still have had a moderate competence, after all his losses, if he had practiced a strict economy."
3. How may unity be violated in the use of the relative clause? Criticise and correct the following: "That is a better statement of the case than yours." "Tell him, if he is in the parlor, I do not care to see him." "I cannot tell what street he lives in." "From whence did he come."
4. Define and illustrate *metonymy* and *synecdoche*.
5. Point out and name the kinds of figures in the following



sentences: "Faith builds a bridge across the gulf of death." "As smoke is driven away, so drive them away."

"My May of life

Is fallen into the sere, the yellow leaf."

"Verbosity is cured by a wide vocabulary." "Cry aloud, for he is a god; either he is talking, or he is pursuing, or peradventure he sleepeth, and must be waked."

6. Name five qualities which produce the emotion of beauty. In what respect do the requirements for beauty in writing differ from those for the sublime in writing?

7. Define rhythm and rhyme.

8. In the first stanza of "The Psalm of Life," give the kind of verse in each line and the kinds of rhyme. Name the kinds of verse in the following lines:

"By the side of the stream in the gloom of the shade."

"With fingers weary and worn."

Describe the short metre stanza.

9. Discuss dramatic poetry.

10. Name and define five kinds of discourse.

#### FOURTH CLASS.

##### ALGEBRA.

1. Define a positive fractional exponent, an imaginary quantity, a literal equation, elimination, and an affected quadratic equation.

2. Divide  $x^{\frac{5}{2}} - x^2 - 4x^{\frac{3}{2}} + 6x - 2x^{\frac{1}{2}}$  by  $x^{\frac{3}{2}} - 4x^{\frac{1}{2}} + 2$ .

3. Combine  $\frac{1}{a+b} + \frac{b}{a^2-b^2} - \frac{a}{a^2+b^2}$

4. Extract the cube root of  $204c^4x^2 - 144c^5x + 8x^6 - 36cx^5 - 171c^3x^3 + 64c^6 + 102c^2x^4$ .

5. Rationalize the denominator of the fraction  $\frac{\sqrt{20} + \sqrt{12}}{\sqrt{5} - \sqrt{3}}$

6. A vessel can be emptied by three taps; by the first alone it could be emptied in eighty minutes, by the second in two hundred minutes, and by the third in five hours. In what time will it be emptied if all the taps are opened at once?

7. There is a number consisting of three digits, such that if 198 be added to it, the digits will be inverted. The sum of the digits is 18. Also five times the units' digit is equal to seven times the digit in the place of hundredths. Required the number.

8. Solve  $\frac{1}{x + \sqrt{2 - x^2}} + \frac{1}{x - \sqrt{2 - x^2}} = ax$

9. A and B carried one hundred eggs between them to market, and each received the same sum. If A had carried as many as B, he would have received 36 cents for them; and if B had only taken as many as A, he would have received 16 cents. How many had each?

10. There are two numbers whose product is 120. If two be added to the lesser and three subtracted from the greater, the products of the sum and remainder will also be 120. What are the numbers?

#### PHYSIOLOGY.

1. Describe the skeleton.
2. " " sebaceous glands.
3. " " albumen and casein.
4. " " gastric digestion.
5. " " the blood corpuscles.
6. " " air passages of the lungs.
7. " " spinal cord.
8. " " sense of taste.
9. " " iris of the eye.
10. " " bones of the middle ear.

#### BOOK-KEEPING.

1. (1.) Explain the difference between single and double entry. (2.) Define debtor and creditor. (3.) Define assets and present worth. (4.) Define the principal books of single entry.

2. Write in single entry the following transactions in the proper books: (1.) Thomas Street has worked for me ten days, at \$3.00 per day, and I have paid him \$15.00 on account. (2) I sold to Wm. Warren 56 lights, 11 by 15, @ 9c; 139 lights, 10 by 12, @ 7c; 1,920 lights, 8 by 10, @ 3c.

4. Define bills receivable, bills payable, trial balance, and balance sheet.

5. Journalize according to the Italian method:—(1.) Bought of Thomas T. Smiley, on my note at 30 days, 100 yards of blue woolen cloth @ \$1.00; (2.) Exchanged notes with Stephen Jones for our mutual accommodation, each drawn at 60 days for \$800.00. (3.) Received of J. Stewart, to balance his account, \$750.00.

6. Enter in day book in journal form the following:—June 4th, 1879, sold Thomas Norris, 1,250 yds. Cassimere at \$4.00 per yard. Received therefor his note at 60 days, which has been this day discounted at the City Bank and cash deposited. Write the note and also the entry in the bank book.

7. Enter in day book in journal form:—Shipped by the North Star, Jones, master, to J. Smith, Liverpool, pursuant to his order and for his account, the following goods from store:

1,400 bushels of Wheat @ \$1.25.

210 bbls. of Flour @ \$8.00.

20 bales of South Sea cotton, 5,500 lbs. @ .20.

20 bales of N. O. cotton, 6,000 @ .18.

30 bales of Upland cotton, 6,500 @ .16½.

Paid for labor, drayage, &c., cash \$170.00; my commission is at the rate of 5 per cent. on the above. Passed my note at four months to Amer. Insurance Co., for premium and policy on \$7,213.00 at 4 per cent. and policy \$1.25. My quarter per cent. for effecting insurance is \$18.80.

8. Enter in day book in journal form: June 4th, 1879, the wheat belonging to Sales Co. A. has all been sold. Total proceeds \$25,000.00; less the duties entered May 12th, \$4,000.00 leaves

\$21,000.00. Storage and labor \$80.00. Interest on the duties is to be reckoned at 6 per cent. Our commission on \$25,000.00 at 2 per cent. The net proceeds are to be credited to the Adventure to New York.

9. Close the following ledger account :

| Dr.   | Adventure to Galveston. | Cr.                            |
|---|-------------------------|--------------------------------|
| April 4th, To Cash,                                 | \$9,000.00              | May 25th, By Mdse. \$15,000.00 |
| " 6th, To Bills Pay.                                | 25,000.00               | " " Cash, 8,000.00             |
| The inventory of goods at Galveston is \$15,000.00. |                         |                                |

10. Make a balance sheet from the following trial balance :

| Dr.                      | Cr.          |
|--------------------------|--------------|
| Stock, - - -             | \$33,295.40. |
| Cash, - - - \$10,787.02  |              |
| Mdse., - - - 34,286.36   |              |
| Bills Rec., - 2,508.45   |              |
| Bills Pay., - - -        | 8,636.50.    |
| Interest, - - - 119.57   |              |
| Expenses, - - - 278.50   |              |
| T. Brown, - - - 1,796.62 |              |
| W. Smith, - - -          | 7,794.62.    |

The inventory of merchandise on hand is \$36,637.11.

## HISTORY.

### ANCIENT HISTORY AND GREECE.

1. Define History and the aids to History.
2. Describe the grand age of Egypt.
3. Describe Nineveh and Babylon.
4. Describe the reigns of David and Solomon.
5. Describe the extent of the settlements of the Phœnicians.
6. Describe the early life of Cyrus.
7. Describe the siege of Troy.
8. Describe the laws of Draco and the laws of Solon.
9. Describe the battle of Salamis.
10. Describe the victories of Alexander the Great.

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ROME AND THE DARK AGES.

1. Describe the real beginnings of Rome.
2. What are the four epochs of the Roman Republic?
3. Give an account of the siege of Carthage.
4. Give a review of Caesar's career.
5. Describe the battle of Actium.
6. Describe the Forum and the Temple of Janus.
7. Give an account of the growth of the Roman Empire after the death of Augustus.
8. What were the real causes of the Christian persecutions.
9. Give an account of Attila the Hun.
10. Describe the order in which the Celtic, Teutonic, and Slavonic races came into Europe.

## MEDIEVAL AND MODERN HISTORY.

1. Describe the three tribes that invaded Britain.
2. Describe Charlemagne's design.
3. Describe the influence of cities in destroying feudalism.
4. Give an account of Henry IV.'s relations with Hildebrand.
5. Describe the Council of Clermont.
6. What was the evil side of chivalry?
7. How was the English Parliament established?
8. Give an account of the origin of the art of printing.
9. Describe the Diet of Worms.
10. Describe the policy of Queen Elizabeth.

## MODERN HISTORY.

1. Describe the execution of Charles I.
2. Give an account of the Treaty of Westphalia.
3. Describe the domestic and foreign policy of Richelieu and his dealings with the nobles.
4. Describe the political condition of England under George I.
5. Describe the youth of Frederick the Great.

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6. Give an account of the two partitions of Poland.
  7. Name in order the assemblies held during the French Revolution and describe the three factions.
  8. Describe the youth of Napoleon.
  9. Describe the battle of Trafalgar.
  10. Name in order the English rulers from Henry VIII. to the present time, and the French rulers from Francis I. to Napoleon.

## GIRLS' DEPARTMENT.

### FOURTH YEAR—SENIOR CLASS.

#### MENTAL PHILOSOPHY.

1. Define perception.
2. Define consciousness.
3. State your opinion of each as a source of knowledge.
4. State what are the primary properties of matter, and the reason for the assertion.
5. Give the reasons for and against believing the mind is material.
6. Are there any principles of knowledge that must be accepted by all?
7. Can the idea awakened by the law of association be controlled?
8. Explain the process by which we pass from the known to the unknown in reasoning.
9. State the relation of memory to the other faculties.
10. State the reasons against indiscriminate reading of fiction.

#### ASTRONOMY.

1. What three men may be regarded as the founders of modern astronomy? For what is each noted?
2. Explain the expression a "Canis Majoris." Tell how to find that star.
3. If a star is on the meridian to-night at 9 o'clock, where will it be in a month from to-night at 8 o'clock? If you were to travel into space with the speed of light how long would it take you to reach the sun? the nearest star? the North star?

4. Give the proof of the earth's rotation that is most satisfactory to yourself.
5. Prove that in latitude  $80^{\circ}$  N. the sun will not set on the 20th of June.
6. Explain  $\delta$   $h$   $\ll$  ;  $\square$   $\Psi$   $\odot$  ;  $\varphi$  stationary.
7. Give simply the conditions for a solar, lunar and annular eclipse.
8. Define declination and state whether the sun ever has no declination and when. State to what system this measurement belongs.
9. Give a general definition of parallax. Define obliquity of the ecliptic.
10. Give the changes that take place in the appearance of a comet on its approach to the sun.

#### MORAL SCIENCE.

1. Distinguish between the Christian and the natural law of self denial.
2. Discuss each of the three great classes of duties.
3. What dangers arise from the appetites?
4. Consider the subject of dress as a moral question.
5. Why is the family the source of special rights?
6. What is the principle of faith?
7. State the benefits to a person of supplying his own wants.
8. Discuss ignorance and vice as barriers to influence.

#### GEOLOGY.

##### I.

Distinguish slate from shale; feldspar from quartz; stratified rocks from unstratified.

##### II.

Name and describe the mineral that causes the disintegration of rocks.



III.

1. How does ice perform geological work?
2. Define *crevasse*, *moraine*, *roches moutounies*.
3. Name the glacial regions.

IV.

1. By what methods have mountains been made?
2. State the law for the distribution of mountains.
3. Name the great volcanic regions of the world.

V.

Describe the effect of air and moisture upon rocks.

VI.

1. What are the Archæan rocks?
2. How may they be distinguished from similar rocks of other ages?

VII.

1. Prove that coal is of vegetable origin.
2. Give the successive steps leading from the vegetable to the diamond.

VIII.

Describe briefly the Appalachian revolution.

IX.

Select and describe one of the characteristic plants or animals of each of the following ages:—Lower Silurian, Upper Silurian, Devonian, Carboniferous, Mesozoic.

X.

Describe the life of the Tertiary Age.

LATIN.

THE ÆNEID.—BOOK II.

1. Line 625. Why "Neptunia Troja"?
2. " 626. Construction of *ornum*.
3. " 632. What deity is meant by *deo*?

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4. Line 638-640. Translate, beginning with *vos*.
  5. " 641-642. Rule for subjunctive.
  6. " 644. Construction of *corpus*.
  7. " 646. "*Facile jactura sepulchri*." Why an unusual remark?
  8. " 647-649. Explain the allusion.
  9. " 657-658. Translate.
  10. " 668. Principal parts of *ferre*; where found?
  11. " 669. Construction of *revisam*.
  12. " 685. Construction of *trepidare*.
  13. " 688. To what is *caelo* equivalent?
  14. " 693. Construction of *laevum*.
  15. " 704. From what does *nate* come?
  16. " 717. What were the *Penates*?
  17. " 723 and 729. Give the nominative and genitive of *oneri*; and the difference in the meaning of the dative and the accusative after *timeo*.
  18. " 741 and 743. What connects *respezi* and *venimus*?
  - " 755 and 759. Translate.
  19. " 765. What were *crateres*?
  20. " 771 and 773. Translate.
  21. " 773. Construction of *nota*, *major* and *imago*; and explain the old belief.
  22. " 779. What and where was Olympus?
  23. " 788, 792 and 794. Who was "*magna deum genetrix*"?
  - Construction of *collo*, *brachia* and *ventis*.
  - 24 and 25. Line 796-804. Translate.

THIRD YEAR—SECOND CLASS.

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## ELEMENTS OF THE ENGLISH LANGUAGE.

1. Of what use are words? Into what families is language divided? Give some account of the family to which the English language belongs.
2. What elements have entered into our English tongue, and what is there in the language to show the presence of each?
3. How was the language affected by the Norman invasion?
4. What form of literature was common in the twelfth and thirteenth centuries? Name the important works.
5. Give some peculiarities of the Anglo-Saxon grammar, and show how this language exhibits great economy of sound.
6. What classes of words are of Anglo-Saxon origin?
7. Give the date of the establishment of the English language, and of the disappearance of the old English; and note briefly the progress of the language during the fourteenth, fifteenth and sixteenth centuries, with some of the causes.
8. Name the source and cause of the great influx of words during the sixteenth century, and designate certain groups belonging to this accession.
9. What are the capabilities of Latin words compared with Anglo Saxon? Account for a difference in pronunciation among a people speaking the same language.
10. Who was Robin Hood? Name the great literary event of the fifteenth century. What important contribution to letters during the eighteenth century? Give the date of the rise of the great English Universities. What language was spoken in England up to the fifth century; thence to the eleventh century; thence to the fourteenth century; thence to the present? What was the influence

of the Italian literature? How large was the vocabulary in the thirteenth century; how large in the nineteenth? What and when was the first attempt at uniform spelling? To what century did Spenser belong and what was his influence on the language? How has America enriched the language?

#### GEOMETRY.

1. Define and illustrate five quadrilaterals.
2. Demonstrate the theorem, if from a point without a straight line, a perpendicular and oblique lines be drawn to this line; the perpendicular is shorter than any oblique line; any two oblique lines equally distant from the perpendicular are equal; of two oblique lines the more remote is the greater.
3. Prove the ratio between the opposite sides and angles of a parallelogram.
4. Illustrate the different ways by which a proportion may be transformed.
5. Demonstrate the theorem showing to what the square described on the hypotenuse of a right triangle is equal.
6. State theorems showing what is the surface of a trapezoid; what the measure of an inscribed angle.
7. Show by demonstration what part of a triangular prism is a triangular pyramid of the same base and altitude.
8. How many square feet in the convex surface of a cone whose base has a radius of three feet, and whose slant height is nine feet? How many cubic feet in a rectangular pyramid whose base is five feet square and whose altitude is nine feet?
9. Given a cube measuring two inches on a side; what will be the measure of a similar solid eight times as large.
10. In a given triangle inscribe a circle.

#### CHEMICAL PHYSICS.

1. Describe and explain the culinary paradox.
2. What is the latent heat of steam and how may it be determined?

3. Explain the dynamic theory of heat.
4. Give the theory which explains magnetism.
5. Explain and illustrate electrical induction.
6. Cause of atmospheric electricity.
7. Distinction between statical and dynamical electricity.
8. Explain the action of a simple Voltaic element. Define the terms *electrodes*, *breaking and closing the circuit*.
9. Upon what does the electromotive force depend? The intensity of the current.
10. Essential parts of the electric telegraph and the use of each.

## CHEMISTRY.

1. Give the chemical properties of hydrogen. Describe one way of preparing it.
2. What is the composition of gunpowder? What are the essentials of good powder?
3. Give the symbol, atomic weight, and quantivalence of silver, and tell what each represents.
4. Give the properties of laughing gas. How is it prepared? Give the reaction.
5. Give the properties and uses of sulphurous oxide.
6. How is carbonic acid prepared? Give the reaction. Mention some of its uses.
7. Explain the order of combustion of a burning candle.
8. What are the constituents of illuminating gas? Describe briefly its preparation.
9. Give the symbols of the first five members of the marsh-gas series and their corresponding ethers and alcohols. Mention the properties of the essential constituent of vinegar.
10. Mention some properties of cellulose.

## ENGLISH POETRY.

1. Define rhythms, foot, long, common and short metre.
2. Define blank verse and mention three well known poems written in that verse.

3. Describe the sonnet. Tell whence it was derived and by whom introduced into our language.

4. Give a true definition of poetry. What does Shakspeare say of imagination?

5. What is an epic poem? Name the greatest epic of antiquity and tell its metre, to whom it is ascribed and to what century.

6. Describe the above mentioned poem. Name some translators.

7. Tell briefly what you know of the poet Gray. To what class of poetry does *The Progress of Poesy* belong? Why called Pindaric ode?

8. Explain the allusion to Delphi, Ilissus, Maeander in the sixth stanza. Where was Parnassus? Who are meant by "the sad nine"? Name them.

9. Name the best known works of Bryant, Tennyson and Mrs. Browning.

10. Mention some other familiar poems expressing thoughts similar to those of *The Forest Hymn*? Define architrave and aisle.

#### LATIN.

##### CAESAR.

1. Book I., Chapter 8. Translate, beginning *Ubi ea dies*, to end of chapter.

2. Give the government of *se*, *ulli Helvetii* and *alii*. Parse *ubi possent* and *conati*.

3. Chap. 16. Translate from beginning through sentence ending with *suppetebat*. Give the government of *Caesar Aeduos* and *frumentum*. Parse *essent polliciti* and *flagitare*.

4. Chap. 23. Translate from beginning through sentence ending with *contendit*.

Parse *diei* and *prospiciendum*.

5. Give the principal parts of the verbs *supererat* and *metiri*

*oportere* and *avertit*. Locate *Bibracte*, *Aedui* and *Helvetii*. Synonyms of *exercitus* and distinction between them.

6. Chap. 38. Translate from beginning through sentence ending with *existimabat*.

7. Book II., Chap. 2. Translate from beginning through sentence ending with *faciant*.

8. Give the government of *deduceret*, *inciperet*, and *cognoscant*. Give the derivation of *negotium* and *initia*.

How many legions did Caesar command? How many men in a Roman legion?

9. Chap. 18. Translate from beginning through sentence ending with *posset*.

10. Parse *adversus*, *infimus* and *passus*. Give the principal parts of the verbs *vergebat*, *nascebatur*, *perspici* and *posset*.

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## SECOND YEAR—THIRD CLASS.

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### RHETORIC.

1. How may strength of style be secured?
2. Explain and illustrate the squinting construction.
3. What may be said of the use of such words as *very*?
4. What facts should influence our choice of words with a view to harmony?

5. Point out the faults in the following sentences:—

The description of this cathedral is very fine, and it took twenty years to build it.

We admire his historical knowledge and his meteorological calculations.

That man I do not know the name of.

Are many pupils present? . I have only seen five or six.

The whole place is pervaded with a great deal of smoke.

6. From what sources do figures spring?

7. Give the principal rules for Simile.

8. What is the effect of mingling metaphorical and literal language?

9. What are the forms of the figure of Interrogation?

10. Point out the figures in the following quotations :—

Yet once more, O ye laurels, and once more  
Ye myrtles brown, with ivy never sere,  
I come to pluck your berries harsh and crude.

The sun, a snow-blown traveler, sank  
From sight beneath the smothering bank.

#### NATURAL PHILOSOPHY.

1. Give an original illustration of a physical change; of a chemical change; an original illustration of impenetrability.

2. What is the metric unit of length, and what is its equivalent in the English measures of length? What is the metric unit of weight and to what is it equal? What is a liter and of what measure is it the unit?

3. How does a gas differ from a vapor?

4. What is the difference between gravitation and gravity? Give the laws of gravitation.

5. Mention two examples of the tendency of water to seek its level.

6. How would you find the specific gravity of gold? Of milk?

7. How high a column of mercury will the pressure of the air support? How high a column of water? Give a proof that air has weight.



8. How much liquid will a solid immersed in it displace?
9. Upon what does the pitch of sound depend? Upon what the loudness?
10. How are bodies classified according to the freedom with which they allow the passage of luminiferous rays?

## MODERN HISTORY.

1. What was the early European home of the Lombards, Franks, Goths, and Burgundians?
2. How came an Ostrogothic kingdom to be established in Italy?
3. Give a brief sketch of the Feudal System.
4. In which Crusade did the siege of Antioch take place? Locate the city and give an account of the siege.
5. What was the method of trial in the Dark Ages?
6. Give an account of the organization of moneyed institutions.
7. Who was Charles V., and what were the chief two events of his reign?
8. What right had Philip II., to the government of the Netherlands and how did he rule them?
9. Who was the prime minister of Louis XIII., of France? What was his chief domestic policy? His chief foreign policy? What did he do for France? What great minister in the next reign carried on his foreign policy?
10. Name the sovereigns of the house of Brunswick. Who was the first born in England?

## ENGLISH LITERATURE.

1. Is it easy to read Chaucer? Why?
2. What have been the principal English versions of the Bible or parts of it?
3. Name the prominent writers of the time of Elizabeth. How does her reign compare in its literature with others?

4. For what are the following places famous :—Penshurst, Kilcolman, Southwark, Westminster and Stratford-on-Avon?

5. For what was Bacon noted? Jonson? Raleigh? Of what great author were they contemporaries?

6. What were Goldsmith's feelings towards his early home? Quote from his works to prove your statement.

7. What was Johnson's style as a writer? Illustrate.

8. Write an estimate of Burns' poems.

9. Name the authors of the following works :—*Hamlet*, *L'Allegro*, *The Romaunt of the Rose*, *Novum Organum*, *Arcadia*, *The Task*, *Essays of Elia*, *The Bard*, *The Talisman* and *Lalla Rookh*.

#### LATIN.

##### CAESAR.

1. Upon whom was Caesar dependent for provisions for his forces and why was he not supplied?

2. Who was the most powerful man of the Aedui? What means did he employ to increase his power?

3. In what war did these events occur? Mention three men of the Gallic tribes who were conspicuous in the war.

4. Translate from Caesar's Commentaries, Chap. XV., five lines beginning with "*Caesar suos a procilio.*"

5. Give the construction of *circiter*; of *amplius*. Decline *agmen* and *millibus*. Why is *interesset* in the subjunctive mood?

6. Translate from Caesar's Commentaries Chap. XXI., five lines beginning with "*Ipse de quarta vigilia.*"

7. Give the construction of *quo*; the rule for *rei*; the principal parts of *contendit* and *pruemittitur*. Decline *eodem*.

8. Translate into Latin the following sentences :—They betook themselves to the bridge at Geneva. Fortune often makes those whom she favors blind.

9. Translate into Latin the sentence :—Caesar had already led his forces across the Arar into the territory of the Aedui.

10. Translate into Latin the following sentences :—Caesar was not at all moved by this request. We know that you are always ready to encounter danger for your country.

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### FIRST YEAR—FOURTH CLASS.

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#### PHYSIOLOGY.

1. What difference is there between the bones of children and those of old persons?
2. What are the causes of the decay of the teeth?
3. Name three muscular organs not under the control of the will, and tell what will stimulate them to action.
4. What changes must food undergo in order to nourish the body?
5. Trace the course of the blood from the left ventricle to a small vein in the wrist.
6. Why is bathing necessary to health?
7. Describe the *cilia*, and state what purpose they probably serve?
8. What is produced by respiration, and what is the effect of breathing impure air?
9. Of what use is the *iris*?
10. What is the *pulse*, and where may it be felt? How long a time does it take the blood to go around the system?

#### ANCIENT HISTORY.

1. Name the ancient Oriental nations.
2. Name the race to which each of the following nations belonged :—Phoenicians, Egyptians, Persians, Hebrews, Assyrians, Chaldeans and Hindoos.

3. Which of the Oriental nations had the best form of government?

Which was the most religious?

Which contributed to art and manufactures?

What nations showed great taste for building?

Name the nations which worked in metals.

4. Give a brief sketch of the rise and fall of the Assyrian Empire?

5. How has our information respecting Egypt and Babylon been obtained?

6. What influence did the physical features of Greece have upon the inhabitants?

7. What was the nature of the countries in which Greece founded colonies, and what was the effect on Greece?

8. Name some of the most important events in Grecian history.

9. What were the cause and results of the Peloponnesian War?

10. Name five noted Grecians, stating for what they were distinguished.

11. Name five important battles of Greece, and then state what they secured.

12. What were the oracles of Greece?

13. Who were the Patrioians and who were the Plebeians?

14. What led to the Punic Wars, and what did Rome gain by them?

15. What led to the civil strife?

16. Name the persons who were prominent in the civil strife.

17. Locate the following places, and tell for what noted :—  
Philippi, Pharsalia, Actium, Munda.

18. What was the extent of the Roman Empire in the time of Augustus?

19. What changes took place in the Roman Empire after the death of Augustus?

20. What was the Forum? What is the date of the fall of the Roman Empire?

ALGEBRA.

1. Two men, A and B, have the same income, A saves  $\frac{1}{4}$  of his but B, by spending \$300 a year more than A, at the end of four years finds himself \$100 in debt. What is their income?
2. A man being asked by another to lend him \$100, replied : "I have not \$100 by me; but if I had as many more dollars and half as many more as I now have, and \$7 $\frac{1}{2}$  I should have \$100." How much money had he?
3. The height of a certain building is 40 feet. The breadth is as much as the height and half the length, and the length is as much as the height and breadth both. What are the demensions of the building.
4. A man exchanged a field 192 rods long and 27 rods wide, for an equal quantity of land in the form of a square. What was the side of the square?
5. A merchant sold a certain quantity of goods for \$75, and gained by this as much per cent. as the goods cost him. What did he pay for the goods?
6. A laborer having built 168 rods of fence, found that if he had built two rods more a day, he would have finished the fence seven days sooner. How many rods did he build a day, and how long was he in building the fence?
7. Simplify the following surd:  $(252 a^3 b^2 - 108 a^4 b^4)^{\frac{1}{2}}$
8. Multiply  $4 a \sqrt[3]{3 a^2}$  by  $3 a b \sqrt[3]{9 a}$ .
9. If you add 2 to the numerator of a certain fraction, the value of the fraction becomes 1, but if you add 3 to its denominator, its value becomes  $\frac{1}{2}$ . What is the fraction?
10. Raise  $x - y$  to the 9th power, by the binomial theorem.

BOTANY.

1. Describe a leaf by the schedule.
2. Analyze the flower given you, following the key.

3. Describe the germination of the plant from the seed, and name the different parts contained in the seed.

4. Define a *perfect, complete, regular and symmetrical* flower, and give examples of each.

5. How do you distinguish between an exogenous and endogenous stem? What peculiarities in foliage, &c., accompany each?

6. What kind of fruit does the botanist call an apple? a melon? a peach? a currant? a pea?

7. What is meant by the terms "ovary superior" and "ovary inferior"?

8. Define herbs, shrubs and trees, and distinguish between annual, biennial and perennial herbs.

#### LATIN.

##### I.

Translate the following:—

Hic rex interfectus est *scelère* filiae Tulliae et Tarquinii Superbi, filii ejus regis, *cui* Servius successerat. Nam ab ipso Tarquinio interfectus est. Tullia in forum properavit, et prima *conjūgem regem* salutavit. Quum *domum* rediret, *aurigam* super patris corpus, in via jacens, carpentum agere jussit.

##### II.

Give the construction and rule of the words underlined in the above passage.

##### III.

Translate the following:

Qui quum negotii cujusdam causa Roman rediret, praecēpit Quinto Fabio Rulliano, magistro equitum, quem apud exercitum reliquit, ne pugnam cum hoste committeret. Sed ille occasionem nactus felicissime dimicavit, Samnites delēvit. Ob hanc rem a dictatore capitis damnatus est.

## IV.

Give the reason for the mode and tense of *redīret* and the rule.

Give the reason for the mode and tense of *committēret* and the rule.

What parts of speech may *ne* be?

Explain the use of *qui* in the above passage.

## V.

Give the synopsis of *redīret* and *praecepit* in the person, number, and mode in which they are found. Compare *felicissime* and the adjective from which it is derived.

Give the genitive plural, and accusative singular of *cujusdam*.

Give the principal parts of *nactus*.

Give the participles from *nactus*.

## VI.

Give the principal parts of the following verbs :

*Gero, defendo, redeo, parco, occido, venio, ago, proficiscor, jubeo, passive of interficio.*

## VII.

Give the ablative plural of *dea* and *deus*.

Give the participles from *expello*.

Give the synopsis of *expello* in the first person, singular number, subjunctive active.

Give one or two English sentences illustrating the difference between *ipse* and *se*.

## VIII.

Translate the following into Latin :

We were in Athens ; in Italy ; in Rome ; at home.

We went home ; to Rome ; into Italy ; from home ; from Rome ;  
from Italy.

The King reigned two years.

Will not these books be very useful to you ?

IX.

Caesar persuades the soldiers to take the city.

They praised us that they might be praised by us.

I do not know what you did.

I did not know what you had done.

X.

Caesar is said to have taken that beautiful city.

It is said that Caesar took that beautiful city.

The senate made Cicero consul.

They asked Cato his opinion.



# QUESTIONS

SUBMITTED TO THE

GRAMMAR SCHOOL SCHOLARS FOR ADMISSION

TO THE

HIGH SCHOOL, JUNE, 1879.

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GRAMMAR. 1879.

1. Write the plural of valley, chimney, money, child, tooth, thief, story, chorus, vortex, mouse.

2. Compare bad, much, near, late, grave, distant, perfect, numerous, likely, under.

3. Write the principal parts of sit, fly, drink, catch, lie, (meaning to recline).

4. Write the progressive, the emphatic, and the passive form of the verbs cut, write, learn, in the third person, singular number.

5. Write sentences containing different uses of *what*.

6. Write three sentences containing *as* used as a relative pronoun.

7. Parse the words in capitals in the following sentences :

“ I heard of HIS being a brave SOLDIER.”

“ He taught them nothing more than WHAT they knew before.”

“ He has been sick since last AUTUMN.”

“ That book of yours was lost.”

8. "WHAT IF the two forces unite, we shall succeed."

"His residence ABROAD was prolonged by sickness."

"In the vale of years BENEATH  
A grisly troop are seen ;  
The painful FAMILY of DEATH  
More hideous than their QUEEN."

9. Correct the following sentences:—It was me. It was her. I intended to have gone. It was William that done it. Each occupied their several farms and cultivated the land.

10. The house was located on rather a narrow strip of land. She has lain her books away. Tell them to set still. The oldest of the two. I shall be happy always to see my friends. After a good nights sleep he woke much refreshed.

#### ARITHMETIC. 1879.

$$1. \text{ Divide } 6\frac{17}{18} \text{ by } 8\frac{21}{5}$$

$$\begin{array}{r} 17 \\ 18 \\ \hline 12 \\ 6 \end{array} \quad \begin{array}{r} 21 \\ 5 \\ \hline 41 \\ 25 \end{array}$$

2. How many tons of coal can be placed in a bin 10 ft. 6 in. long, 5 ft. 4 in. wide, and 4 ft. 6 in. deep, providing one cubic foot of the coal weighs  $90\frac{3}{8}$  pounds?

3. Find the cost of plastering the walls and ceiling of a room 18 ft. long, 5 yd. wide and 9 ft. high, first deducting 4 windows 6 ft. high,  $2\frac{3}{4}$  ft. wide ; 3 doors 7 ft. high, 3 ft. wide, and a mop board 9 inches high, at 36 cents per square yard.

4. Find the number of rolls of paper needed to cover the walls of the above room, each roll measuring 8 yards long and 2 feet wide.

5. Find the cost of carpeting the above room with carpet  $\frac{3}{4}$  of a yard wide at \$1.33 $\frac{1}{3}$  per yard.

6. A merchant bought molasses, and lost  $\frac{1}{5}$  of it by leakage; he sold the remainder at 25 % advance. What was his gain or loss per cent?

7. A merchant lost 20 % of his goods and sold the remainder at a gain of 40 %; what was his gain or loss per cent?

8. An agent received \$12,000 to buy cotton at  $11\frac{3}{4}$  cents a pound, after deducting his commission of  $\frac{3}{4}$  %. How many pounds did he buy?

9. A merchant sold sugar at 8 cts. and gained 10 %, had he sold at 10 cts. what would have been his gain?

10. Find the face of a note to receive \$500, when discounted at a bank for 90 days at 5 %.

#### HISTORY. 1879.

1. Give an account of the discovery of North America by the Cabots.

2. Give an account of the settlement of Salem and the founding of Massachusetts Bay Colony.

3. Give an account of Roger Williams and the settlement of Providence Plantations.

4. Give an account of William Penn and the settlement of Philadelphia.

5. Give an account of the battle of Long Island.

6. Give an account of the encampment of the Americans at Valley Forge.

7. Give an account of the "First Legislative Assembly" in America.

8. Give an account of the "First Continental Congress."

9. Define the Federal Constitution and state some causes which led to its adoption.

10. How do bills originate, and how are they passed? Explain the approval and veto power of the President.

## GEOGRAPHY. 1879.

1. Define latitude and longitude.
2. Give the latitude of Paris, Rome, Constantinople, St. Petersburg, Washington.
3. Draw a map of France and locate five important cities.
4. Draw a map of Michigan and locate several towns.
5. Draw a map of Hindoostan, and locate five or more towns.
6. Name the exports of Northern Africa.
7. Through what waters would a vessel pass in going from Providence to Galveston, via Liverpool.
8. Describe the route of a vessel from Liverpool to Odessa.
9. Locate Smyrna, Damascus, Aleppo, Bagdad, Trebizond.
10. Name the important animals of Africa.

## SPELLING. 1879.

Salary, celery, prairie, apostary, sieve, trellis, alpaca, omelet, chestnut, anonymous, mucilage, syllogism, penetrate, orifice, raillery, massacre, consummate, cauliflower, surgeon, gingham, seizure, sterling, sturdy, preface, oculist, occult, surgery, surveyor, vitriol, legible, tenable, delectable, sizable, stirrup, canine, gherkin, malleable, pearly, archetype, architect, broccoli, diphtheria, heliotrope, euthanasia, malfeasance, depot, erysipelas, apothegm, pentateuch, vermin, pusillanimous, giaour.





1880.]

CITY DOCUMENT.

[No. 25.]

ANNUAL REPORT  
OF THE  
SCHOOL COMMITTEE  
OF THE  
CITY OF PROVIDENCE,

[JUNE 30, 1880.]



PROVIDENCE:  
PROVIDENCE PRESS COMPANY, CITY PRINTERS.  
1881.

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1880.]

CITY DOCUMENT.

[No. 25.]

# ANNUAL REPORT

OF THE

SCHOOL COMMITTEE

PROVIDENCE.

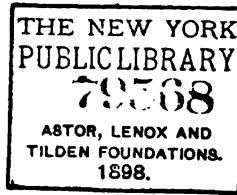
*Mr. Edwin M. Stone, Providence, R.I.*



PROVIDENCE:

PROVIDENCE PRESS COMPANY, CITY PRINTERS.

1880.



IN CITY COUNCIL, December 2, 1880.

UPON THE ANNUAL REPORT OF THE SCHOOL COMMITTEE, for the year ending June 30, 1880:

READ, whereupon it is ordered that the same be received and printed.

Witness,

HENRY V. A. JOSLIN, City Clerk.



## REPORT.

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TO THE CITY COUNCIL OF THE CITY OF PROVIDENCE :

GENTLEMEN:—Referring you to the accompanying reports for the details of the management of the Public schools of the city for the year 1879-80, there are yet some remarks of a more general character with which it is customary to preface these reports.

It is presumed that the practical working of the public school system of this city, in its important educational aspects, is quite equal to that of any city in our country.

In point of economy, the actual statistics afford a definite ground for positive statements.

The number of scholars reported as attending the day schools the last year, was 13,328. The appropriation made for support of the public schools, was \$206,235.10; the amount actually expended was \$196,683.95, leaving a surplus of \$9,551.15. Deducting the cost of evening schools, \$11,897.28, makes the cost of educating each day scholar \$13.86.

The city of Lowell, Mass., prides itself upon the character and economical management of its public schools. In its Report for 1879, the number of day scholars is stated as 6,539; the total expenditure for schools, \$125,429.68; the cost of evening schools, as \$8,203.62, leaving \$117,226.06, or \$17.93 as the cost of each day scholar.

The average cost of each day scholar in Quincy public schools, is stated to be \$16.48. In Boston the cost per scholar is more than double what it is in Providence.

These comparisons, if comparisons were not odious, might be very largely extended with similar results.

A due appreciation by the citizens of the importance of free public education, is manifested by their liberal appropriation of money for this purpose; the amount being second only to that for the interest on the public debt.

The school edifices are among the first objects to attract attention on approaching the city, the long and animated procession of the future men and women of the city, going to or returning from these centres of instruction constitute about one-sixth of the entire population, and are unmistakable indices of its future cast and character.

The constant and rapid extension of the boundaries of knowledge, from year to year, make the problem of how to best educate the coming citizen, a more and more vexed and difficult one for solution. How to

overcome the traditional stolidness and indifference of scholars, what is the best method to interest them in their studies; how to select from the vast mass of human learning, the elements which are best adapted to entice the pupils to become earnest in the pursuit of useful knowledge, and which will give them the keys to unlock such stores as shall best qualify them, as life advances, to become useful and efficient citizens, are important subjects for consideration.

The technical school period is but one stage of public education, and one of which many persons are never able to avail themselves.

Education begins at birth and continues to the close of life.

The first three or four years are perhaps the most fruitful in the acquisition of knowledge, of any equal period of human life. The average child of that age has attained to the use of oral language, sometimes in two or more tongues. It has learned the names and distinguishing characteristics of innumerable objects, and has accomplished this mainly by the exercise of its own powers of reason and comparison. How was the interest imparted and maintained which was indispensable to the acquisition of all this knowledge? Does not this early period afford an invaluable opportunity for studying the operations of the human mind, and the wonderful processes of nature in a field which has been sadly neglected by metaphysicians and educators?

At this early period the child's physical comfort and mental enjoyment confront it in every object presented to its newly acquired senses, and it cannot fail to be impressed with everything around it.

As life advances, novelty wears off, and, since every valuable attainment requires effort and self-sacrifice, too often interest flags and inaction and stupidity succeed to the once cheering promise of an active, earnest, useful life. This is the parents' opportunity, they only are on guard and their responsibility is very great. A little farther on the teacher takes an important part of the charge, and if fully awake to the fact that absorbing attention is the essential, and almost the only condition of success, he has a very simple problem before him, namely, to instruct the child to fix its mind upon a subject and keep it there until it has mastered it in all its parts and bearings.

The fearfully mysterious relations of life to the material world is full of topics for thought and of objects happily adapted to train thought in every conceivable direction of development, to limitless conceptions of truth, beauty, benevolence, and unswerving justice, as constituting fixed and inevitable conditions of our existence; subjects of such momentous and personal concern as may well arouse teachers, and through them, scholars, to "lift up their eyes," their entire consciousness, and look on "fields white and ready for harvest," with abundant compensation for those who labor. This

period is the school teacher's seed time. How often may the teacher prove as a turn table, to give a new and fortunate direction to all the future of a human existence! It is a teacher's duty to induct the pupil into the best methods of unlocking as many of the treasures of practical useful knowledge as possible ; the election of what to teach should depend upon the probable time which in any given case, can be devoted to the acquisition of the elements of knowledge.

It was given as the opinion of a distinguished scholar and teacher, that to be able to read and write with some knowledge of arithmetic, was a good education. The possession of these elements of learning, may lead a mind, fairly aroused to the importance of the subject, to the attainment of all the knowledge which human capacity and the brevity of life admit of.

Taking the hint, perhaps from nature, Kindergarten schools have, by object teaching, done something to interest young children in learning. The "half time system," which has been tried in the primary grades in St. Louis, San Francisco, Chicago, and other places in this country and in England, is said to have been very successful, "the children learning nearly as much as by the whole time plan." This is doubtless due to the fact stated by Superintendent Stone, of San Francisco, that "by common observation, we find the last hour in the afternoon session, irksome, and in the lower grades, almost useless, especially in ill-ventilated rooms in summer." The secret of success is to secure close attention.

"The Quincy departure," about which much has of late been said, is based upon this principle, which it endeavors to secure by making all the teaching practical.

The Superintendent, Francis W. Parker, in his Report for 1879-80, says, "The main purpose of all our teaching is to awaken and express thought." . . .

"The results are very gratifying, although they differ greatly in the different schools." He says, "Training the senses is the foundation of education and it has much to do with the superstructure, the practical value of close, accurate observation, cannot be overestimated."

"Normal teaching and good treatment have nearly, if not quite settled the question of attendance." . . .

"As a rule the children attend school when they possibly can." . . . "We have had but two truants who seemed incorrigible, and they have been cured," he says, "I am happy to say by kind treatment." . . .

"The love for books and reading is increasing with rapid strides." "That a great love for good, healthy literature can be aroused in the minds of all children who attend our schools, is to me," he continues, "no longer an open question. Good reading is one of the direct results of good teaching. When the children's minds are open and active, when they are led to crave knowledge, teachers can easily direct in the richest fields of thought and imagination." He says, "I am painfully aware how very far from a perfect system we still are, and how very much there still remains to be done."



His estimate of the importance of employing good teachers should not be overlooked. He says: "Money cannot measure the difference between good and poor teachers; no amount of supervision; no methods, however excellent, can remedy in any degree the defects of an incompetent teacher; the teacher is the school." Commending a faithful teacher who had taught twenty-five years in one district, and who "is ever eager to learn new and better ways of teaching and treating" those under her care, he says the citizens of the district "owe her a lasting debt of gratitude." Who that knows our teachers does not echo this sentiment for many tried and faithful ones in Providence.

We have dwelt at some length upon these "new departures" in teaching, as they are termed, the secret of the success of which depends upon securing the interested attention of the pupils by judicious, practical illustrations, "seen with their own eyes and handled with their own hands." But is this theory or practice original and peculiar to the schools of Quincy? We may go very far in pursuit of an object and find at last that we had as good or better at home.

In his "Directions to the Teachers of the Primary and Intermediate Schools," given in 1873, the Superintendent of Schools in this city insisted that all the principal points which are now claimed especially for the Quincy schools, should be observed by the teachers of Providence in instructing their pupils. We are

pleased to see these instructions reprinted in the new edition of the by-laws, and we wish they may be carefully pondered, not only by the teachers, but by all interested in training youth.

Again, in his address at the dedication of the Point street school house, the Superintendent said: "To finish and perfect our work of instruction, there is much needed a department in which the relation of science to art, and the application of knowledge to the various branches of industry may be successfully taught. This is imperatively demanded to elevate our schools to the highest possible practical efficiency." He says: "It is not from books alone that the most valuable knowledge is to be gained, but from the progressive spirit of the age and the onward march of civilization. Nature, too, in all her variety, beauty and grandeur, animate and inanimate, is the great teacher. Let our youth early be taught to listen to her teachings; to explore her secrets; to bring to light her hidden treasures; to commune with her in her beautiful and sublime forms, as well as in the deeper symphonies of her divine harmony. Let the entrance to the paths of knowledge *ever* be through her golden gates, adorned with her choicest beauties garnered from her rich and inexhaustible storehouse." The purpose of instruction "is not merely to give intelligence and ability to get wealth, though this has a value that cannot easily be reckoned. It has a loftier aim. There is an inner life, with its emotions, its desires and

its passions, to be regulated and controlled. It is character, pure, noble, elevated, that is here to be wrought."

The spirit of the Superintendent has been participated in by the teachers. Attempts were made by many who had themselves but a meager acquaintance with natural history to awaken the interest of their pupils by exhibiting to them and explaining in a brief way various natural objects. About two hundred teachers attended during the winter of 1878-9 a course of lectures upon practical mineralogy, studying with the objects in hand; many of them have since made handsome collections of their own, companies of ladies going several miles in pursuit of specimens. This knowledge they are eager to increase and to apply, as opportunity offers, for the instruction of their pupils. In one grammar school, especially, much pains has been taken to interest and instruct the scholars to inquire into the natural history of the various objects with which they are surrounded, and with encouraging results.

If the school period has been well improved by both teachers and scholars, at its close the latter are supposed to have learned, in some measure, how to avail themselves usefully of the various agencies with which they will be brought in contact in active life; in short, they will have learned something of the methods of learning.

If the teacher has had a weighty responsibility resting upon him during their preliminary education, that responsibility now rests upon each individual with which

the newly constituted member of society is brought in contact.

A taste for good reading, let us hope, has been formed in their own homes or at school.

Periodical literature now constitutes a most important agent in their education. Who can estimate the influence of the newspaper in its weekly, semi-weekly and daily issues? Allow these combined editions to have an average daily circulation of only 20,000, and that each number is read by five persons, the editor then addresses an audience of 100,000—a hearing more numerous than all the clergymen in this State have during the two or three days of the week usually allotted to them. If the schoolmaster is abroad, the modern editor is much more so, his influence, if wisely used, exceeds that of the clerical and lay teachers combined. The popular newspaper is very nearly an exponent of the moral and intellectual status of the people among whom it circulates. It is the educator of the adult public.

A good education has at least two indispensable elements, the intellectual and the moral. A trained intellect that has not learned submission to moral obligations, is a dangerous factor of society.

People of very mediocre intellectual attainments, if firmly grounded in integrity and strict regard for the rights of others, are useful members of the social compact. An unprincipled but learned and skilled man is a pest and burden wherever he has influence; if an

engraver, for illustration, he may endanger confidence in the circulating currency of a country; skilled in some other department of mechanics, he renders treasure, even behind bolts and bars, insecure; like the moth or the canker worm he would, if undisturbed, work his own ruin by destroying the principles which nourish him. The immoral man, in every gradation of the term, is just in that ratio, according to his ability, an enemy to all true civilization, to all real prosperity.

Respectfully submitted,

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| WELCOME O. BROWN,  | } <i>Committee.</i> |
| ARTHUR W. DENNIS,  |                     |
| WILLARD H. GREENE, |                     |

EXTRACTS  
FROM THE  
QUARTERLY REPORTS OF THE SUPERINTENDENT.

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PROVIDENCE, NOV. 21, 1879.

*To the School Committee of the City of Providence:*

GENTLEMEN:—In a city in which the population is so changeable and fluctuating as that of Providence, there must, of necessity, be often great changes in the organization of the schools. During the past term these changes in our schools have been unusually great. In the eastern section of the city a new Catholic school has been opened, and between three and four hundred children have been taken from our schools. This movement has not only made it necessary to close five rooms, and has lessened the number of pupils to a teacher, but has also, for the present, seriously interfered with the established districts, grades and classes. There has, however, been an increase of pupils in the western section, nearly or quite as large as the diminution in the eastern. To provide for this increase four additional rooms for primary pupils have been opened; one in Hospital street, one in Richmond street, one in

Messer street, one in State street. The rooms that we have been obliged to close are two in the East Street Primary, two in Arnold Street Primary, and one in the Thayer Street Grammar.

Notwithstanding these great changes, which were unavoidable, our schools, as a whole, are in a very satisfactory condition. They have never been more so. The constant aim of our best teachers is not only to make their teaching thorough and exact, but, as far as possible, to make it eminently practical, to point out its relation to life's work and its duties. Some of the prominent defects and faults that have existed have been remedied. There is less of the tread-mill routine in the school-room and more earnestness and vivacity in the teachers, who are beginning to understand and to appreciate more and more what has been so repeatedly and so emphatically urged upon them, that a true education consists not in the ability to repeat simply words, or in a technical knowledge of definitions and rules, but rather in the clear comprehension of the ideas and thoughts, of which words and definitions are but the signs and symbols.

The course of study in our High School has been somewhat shortened, and more time is now given to a thorough review of Grammar school studies, and to those branches that will best fit young men for the various mechanical or mercantile pursuits.

There has been, the past term, a number of changes

in the teachers in the High School. Mr. Benjamin I. Wheeler has resigned to become an instructor in Brown University, and Mr. Myron F. Pease has resigned on account of ill health. Mr. Benjamin Baker, late principal of the High School in Woonsocket, has been appointed to the place of Mr. Wheeler, and Mr. Stephen O. Edwards has been appointed to Mr. Pease's place. Mr. Walter G. Webster has also been employed as an additional assistant in the Classical Department. The High School is now in its usual prosperous condition.

In our Grammar schools far more attention is now given to the quality of the work than to the amount. It is now the constant aim of our best teachers to cultivate in their pupils habits of fixed attention, and to give clearness and force to their thoughts on all subjects taught.

A most valuable weekly exercise has been introduced in some of our schools with the most gratifying results. The teacher or one of the older pupils reads to the class from some standard author a choice extract, judiciously selected and adapted to the tastes and capacity of the class. When the reading is finished, each pupil is required to write on his slate or on paper, in words of his own selection, the thoughts and ideas contained in this piece. This is one of the best methods I have ever known in testing the ability of pupils to extract thought from language, and to give it expression in words of their own selection. I would earnestly recom-



mend this practice to all teachers in every grade of schools.

The crowded condition of a few of the primary schools still continues, seriously impairing their efficiency. Can this be justified either on the plea of economy or humanity?

There has been but a slight improvement in the attendance of pupils in our schools the past term. The number of truants is still very large, and hundreds of our youths that ought to be in school, roam our streets in idleness, fully bent on mischief. It can no longer be doubted or questioned that if we would maintain our schools in their present condition or increase their efficiency, we must have a judicious truant law and discreet truant officers. Until our legislators shall, in their wisdom, see fit to pass such a law, the present evil will continue to increase. If the members of the police department were empowered and directed to co-operate with teachers and parents in checking the evils of truancy, and to arrest and take to the school or their homes, all truants or idlers found in the streets, a very great and valuable service would be rendered. There are a great many parents who would gladly welcome such aid in securing the attendance of their children at school. In one or two districts such assistance has already been rendered by some of the police with the best results. If this assistance could become general, or could one or two efficient truant officers be ap-

pointed, hundreds of our youth would be rescued from the paths of vice and crime.

Other States and cities have truant laws and efficient officers to enforce them; why should Providence be compelled to endure the evils of truancy without any effort being made to abate them?

The different modes and methods of teaching are now being discussed with an earnestness and enthusiasm unprecedented in the history of education. This discussion, if wisely conducted, will undoubtedly tend to the advancement of sound learning. In the cause so pre-eminently beneficial to the best interest of society, we need all the wisdom that can be gained from the largest and most successful experience of the most prominent educators of every age. Ingenious theories, however plausible they may, at first, appear, even advocated by a glowing eloquence, are very different from the practical results that have been obtained by a long and rigid test in the school-room. The comparative merits of different methods cannot be wisely determined in the trial of a few weeks or a few months. An earnest teacher, full of enthusiasm and faith, may, by devoting all his energies to a new method, produce remarkable results, but whether the success is to be attributed solely to the new method, or to the power of the teacher, cannot be wisely decided until this same method has been tried by ordinary teachers under ordinary circumstances. While the best methods are to be constantly sought after and prudently adopted, it should be ever

remembered that the quickening power of a live teacher is vastly superior to any educational labor-saving process that ever was devised.

One prominent subject of the recent discussion has been, "The first steps in reading, or how young children shall be taught to read." There are three methods that have been practiced more or less by different teachers, the alphabet, the phonic and the word method. Each has its advocates and earnest defenders. The old alphabet method, which, when followed exclusively, confined the pupils to the letters, and their combinations into syllables without any meaning, is now very generally ignored by our best teachers, as it involves a great waste of time and utterly fails to awaken any interest or thought in the pupils.

To teach the true phonic method, we must have books printed in the phonetic type, which differs very materially from the alphabet now in use, so that pupils must learn two sets of characters before they can read or spell words in common print. There are many earnest advocates of this method, and in a few places it has had temporary success. But that which is most valuable in the phonic method, which is a clear, accurate pronunciation of the sound of each word and letter, may be taught by careful training from the ordinary type and without any change of characters.

The exclusive word method is now attracting the most attention. Nearly forty years ago it was intro-

duced into some of our larger schools, and urged with a vehemence and zeal worthy of the best of causes, as the only true and rational method of teaching young children to read ; but after a few years of trial, it was, in many instances, greatly modified. It has recently been revived and is advocated with a confident assurance, that it is not only the best but the only way in which children should be taught, and that its general adoption would be a new era of progress and would usher in the dawn of an educational millennium.

It is undoubtedly true that when children begin to read, they should be taught, as far as possible, to regard words as signs of ideas, and that this should be the prominent aim of every teacher. But reading is a mechanical exercise as well as mental, and the exact pronounciation of words and the letters that compose them must also be thoroughly learned. The wisest course seems to be, not to pursue either method exclusively, but to unite the three so that each can be learned in the shortest term and with the least effort. That children should never be taught to pronounce or to spell a word without associating its meaning, may be plausible in theory, but it is utterly impossible in practice. There is a very large class of words used as connectives and modifiers, with which, when standing alone, no definite ideas can be associated, and their meaning and use can be learned only from the composition and the structure of sentences.

A true progressive teacher will not follow blindly any one particular method, but will aim to combine the excellences of each.

Another topic has been recently discussed, which has an important bearing upon the management and discipline of our schools. It has been asserted without any qualification, by some high in authority, that the emulation introduced into our schools should be discontinued, as tending to intellectual and moral degradation.

It is lamentably true that the practice that has been adopted in not a few schools, of stimulating the pupils to over-exertion by offering prizes, premiums and rewards of various kinds, has often produced the most disastrous results, and that many a sensitive and ambitious youth, having equally ambitious parents, has been broken down in health and consigned to an early grave.

But the abuse of a power is no valid argument against its judicious use. Were we to condemn and discard all the means and agencies for good that have been misapplied or misused, some of the noblest and best gifts ever conferred on man would have to be rejected and ignored.

It is a fact patent to all, that steam, when raised to a very high pressure, and employed by ignorant and unskillful hands, has been the cause of the destruction of thousands of valuable lives; but will any one wisely contend that steam is too dangerous and destructive to

be any longer used as a motive power, and that it should be abandoned?

There is a kind of emulation that is sometimes found in our schools that stirs up the worst passions, awakening jealousies and animosities between rivals that should be deprecated as a serious evil and as demoralizing in its tendency. But some motive power to quicken the minds of children and to encourage them in the path of duty is a necessity in every good school. It is also an unquestionable truth that the highest and purest should always, at first, be employed, and no others, when these avail. In schools composed of pupils whose minds are somewhat matured, and who have a thirst for knowledge and begin to appreciate the pleasure of refined taste and high culture, no additional stimulus is needed. But there is a class of pupils whose minds cannot be reached by such motives. The fear of punishment and disgrace, though it seldom if ever excites to virtuous or noble action, is a necessity to restrain from wrong doing.

That our large schools, embracing every variety of character, taste and disposition, can be efficiently taught, disciplined and governed without other stimulus than the mere love of study and of knowledge for its own sake, and that there should be no credit marks or difference in rank—no test of scholarship—no examinations, but that the studious and the idle, the obedient and disobedient, should be entitled equally to the same com-

mendation, is one of the vagaries that few teachers of experience will be guilty of.

If in social life there were no stimulus to effort, and all hope of distinction or reward of any kind were taken away, man would soon sink to the level of the brute.

There is an evident desire of most of our teachers to make their work as thorough and practical as possible, and for this purpose they eagerly avail themselves of the very best methods and means which the largest and most successful experience of others may suggest. They confidently believe that teaching is not only an art, but a science, which is not surpassed, in the important benefits it confers, by any other science within the scope of the human mind; and that the only true test of progress and improvement is the results obtained by experience and careful observation. Their chief aim, however, is to develop in harmony all the powers of the youthful mind, and to train them to exact and patient thought. They seek to adapt their instruction, as far as is possible, to the capacity and the wants of each individual pupil, so that he may within the shortest time be the best fitted for the vocation he intends to follow, and especially to cultivate such habits in acquiring knowledge, and such tastes for scientific investigation, as will guide him in after life, in all future acquisitions. Their constant purpose is to impart knowledge that is substantial and valuable chiefly for its use. The

knowledge that is showy, superficial and mainly ornamental, and which is highly prized at exhibitions, they leave for those who have time and means to indulge in such luxuries. This is, or ought to be, the aim and purpose of our *best* teachers.

There are several important topics intimately connected with the welfare of our schools that have been recently discussed, that deserve a brief notice, lest the discussion leaves an erroneous impression on the minds of some teachers. I refer particularly to the questions, what shall pupils read when out of school, and what prominence shall be given to the cultivation of the memory? These subjects are too vast and too important to the future of our youth to be fully discussed in a single report. Only a few hints and suggestions can now be given. That there is a very large amount of reading matter in every possible form which is pernicious in the extreme, that is now furnished the young, cannot be doubted. But the question to which I would especially refer is how far our youth should be encouraged in reading fiction.

I would not by any means recommend that all fiction be discarded from our school libraries, or that it be entirely ignored in the education of the young. Works of the imagination hold a very high and important place in our literature. Nowhere, except in the sacred volume, are there such sublime truths, such lofty conceptions of the true, the beautiful and the good, such



noble patriotism and such deep sympathy with suffering humanity, as are often portrayed in living truth and glowing eloquence on the pages of the poet and the novelist. To such gifted minds are we indebted for much of our choice literature.

They gather their materials for their beautiful creations from the whole realm of boundless Nature; they enter the inner temple of the soul, explore its profoundest depths, and unfold the silent and secret workings of its own mysterious life. They bid the historic past, with its buried secrets and hidden treasures of thought and noble sentiments, lay aside its shroud, and come forth in all the freshness and vigor of modern youth.

But the descent from these pure regions of taste and imagination is easy and often rapid, to the sloughs and and filth of brutish minds—the vast difference and broad chasm between these two classes of fiction should not be overlooked or forgotten.

There is often a charm and fascination in fictitious tales that excite and foster in the youthful mind, a sickly sentiment and a morbid taste for what is unnatural and often demoralizing. To gratify this perverted taste, writers abound, whose principal aim is to arouse to the highest pitch the strong passions, by the recital of deeds of piracy and murder, and the portrayal of ghosts, goblins and hideous monsters, equalling if not surpassing the depraved conceptions of

a Danté or the vilest demons of heathen mythology. Such intellectual food should never be allowed for youthful minds.

The reading of fiction, even of the better class, when indulged in immoderately, is positively injurious. Its tendency is to form habits of loose, desultory thinking, and to counteract in a very large degree the mental discipline and concentration of thought which is the prime object of education. The eye runs rapidly over the printed page, while the imagination gloats on the varied scenes and pictures that are presented before it, without exciting thought or reflection.

Very many of the popular tales and serials that are now supplied in such profusion, give false views of life, its duties and responsibilities, making success to depend not on industry, skill, patient toil and persevering efforts, wisely directed, but rather upon a fickle and capricious fortune, who is represented as bestowing her favors without regard to the diligence and energy with which they are sought, or to the worthiness of the recipient. The youthful mind also often becomes so familiar with, and is so impressed with what is unreal and imaginary, as to lose that reverential regard for truth which is the basis of all that is pure and noble.

The mental habits thus formed, often have a decided influence on the future character of the young, in giving birth to, and in fostering those dreamy speculations and that gambling spirit which are now so rife in almost all

business transactions. In not a few of our popular stories there is lurking an insidious poison that imperceptibly vitiates the taste, and corrupts the purest minds.

Pupils, when attending school, should read sparingly of fiction, even of the purest kind. From careful observation and diligent inquiry I am fully persuaded that a large share of the ill-health of pupils that is complained of, is to be attributed, not so much to the severe tasks imposed in the school-room, as to sensational reading and other excitements out of school, and to the neglect of the fundamental laws of health.

There is another subject of great practical importance that has recently been discussed, in regard to which, teachers should have correct and sound views, in order to be eminently successful in their work. I refer to the improvement and the cultivation of the memory.

There is very often a strong tendency to rush from one extreme to its opposite. Because the faculty of memory has in former times been abused by forcing it to memorize words without any definite meaning, and to treasure up useless and unimportant matter, there are those who seem to ignore this faculty altogether, and to stigmatize its culture by a very common word among modern critics, called "cramming." This word is now used as a kind of bugbear to frighten inexperienced teachers, and to deter them from one of the most important and valuable exercises of the school-room.

The development and culture of all the other intellectual powers of the mind are of but little avail when the memory is neglected. In truth, there is nothing that can be rightly called knowledge that cannot be reproduced, in consciousness, from memory. There is, however, a very broad distinction, that should never be overlooked, between crowding the memory with dry details and worthless matter and with facts that have no intimate relation, and in storing it with clear ideas closely united by the laws of association, with imperishable truths, with "thoughts that breathe and words that burn," and with the noble sentiments that constitute the chief treasures of knowledge.

And I would not confine its culture solely to the acquisition of ideas. Words are but the instrument of thoughts, and these should be thoroughly studied, both in their origin and their use. A rich and choice vocabulary can be acquired in no other way. There is often a mysterious and phonographic element in words which is, after the lapse of time, evolved in all the beauty and force of their primal significance.

There are no treasures on earth that can be compared to the best thoughts and noblest conceptions of gifted minds, when clothed in significant and appropriate language. These rich gems, both in poetry and prose, should be diligently studied and committed to memory, not for the ideas only, but for the rich and forcible expression. It cannot be too often or too emphatically

repeated that there is no exercise in our schools that is superior to this, none so valuable or so essential to a pure style or to thorough scholarship.

No one has ever risen to eminence in any department of knowledge, who has not sedulously and perseveringly cultivated his memory by storing it with the rich treasures of the past.

I would say then to all teachers, study to give vigor and power to the memory of your pupils. Invigorate it by all judicious means, but do not abuse it. Rich gems only should be securely deposited in a valuable casket; and, teachers, be not deterred by the fear of the invidious epithet of "cramming."

In close connection with the cultivation of the memory of pupils is the use of text-books in schools. Many are prone to forget that the abuse of a thing is never a valid or legitimate argument against its judicious use. That unskillful teachers have often misused text-books is a lamentable fact, but is this a sufficient reason for ignoring or discarding them altogether? There are certain principles, facts and primal truths that underlie every branch of study, and these must not only be illustrated, defined and stated in the most precise and exact language possible, but they must be so enwrought into the memory that they can be produced at will for future use.

Is it not preposterous to suppose that the ordinary teacher or his pupils, with their imperfect knowledge

and limited vocabulary, can define and state fundamental principles with greater exactness, or can analyze more perfectly the simple elements of knowledge, than has been done by the eminent teachers and scholars who have prepared works expressly for teaching, and have tested their accuracy by large experience?

There are a few truths of such vital importance, and so fundamental to the highest welfare of our schools, that they cannot be repeated too often, nor enforced with too much earnestness. I refer particularly to the deep interest and tender sympathy that should be extended to our Primary schools. That there is sometimes manifested a disposition to undervalue and ignore these schools is lamentably apparent. While our High and most of our Grammar schools have splendid buildings, and are furnished with almost all needed accommodations, and with able and experienced teachers, some of our Primary schools are crowded into poorly-ventilated rooms, with uncomfortable seats, and are often committed to the care of young and inexperienced teachers; and in several schools, when assistants are needed, they are obliged to hear their classes in confined clothes closets or in the cold entries. Is this either wise or humane?

In every important enterprise a wise and right beginning is necessary to complete success. This universal maxim is often lost sight of in education.

It is evident that the value and importance of our

Primary schools can hardly be overestimated. None but those who have long and carefully watched their progress can be fully aware of the vast influence they exert, and of the responsibilities of those who have their supervision and control. Nearly one-half of all the pupils registered in our schools are in the Primary. Not many more than one-half ever enter the lower classes in the Grammar school, and not one in ten enter the High school. These are facts worthy of thoughtful consideration.

There is yet much to learn in regard to the best and most successful method of training and educating the young. Far better would it have been for the cause of sound learning and humanity if the advanced minds of the past and present age had given their thoughts and study to the philosophy of childhood—the true method of developing and cultivating all their powers—than to the fruitless speculations about inscrutable mysteries which lie beyond the reach of the human faculties, and if fully explained would be of but little practical value.

There is, however, much truth and sound philosophy in the system of Froebel which has, in a modified form, been introduced into a few Kindergarten schools. The underlying principles of this system are unquestionably of very great value and ought not, either by parent or teacher, to be ignored. The tender, plastic mind of childhood is not only quickly sensible to im-

pressions, but these impressions are the most permanent, and have the greatest formative power in determining the future character.

It is universally admitted that the tenderest plants require the most skillful and assiduous culture. But how much greater care, anxious thought and tender love should be bestowed on the youthful mind in the first buddings of the intellect and heart—the unfolding of the germs of an immortal life. This golden period of childhood should not only be watched over with all the vigilance that the tenderest affection would prompt and the highest responsibility demand, but it should be so wisely improved that the richest fruitage of culture may be abundantly realized. The first year, at least, in school, should be devoted to quickening and developing the perceptive power of a child, and in directing them to proper objects of observation. For this purpose, amusement, as far as possible, should be combined with instruction. It should be the constant aim of the teacher to make the entrance to the paths of knowledge pleasant and attractive by throwing around them the charm of novelty, and by presenting the varied objects in nature in their diversified forms and color. It is principally with form and color that education begins. These furnish not only the simplest elements of knowledge, to the mind of a child, but they constitute, by their happy arrangement and combination, the noblest productions of genius. But the period in which amuse-



ment is made prominent in instruction should not be prolonged, otherwise, pupils will soon regard the going to school as a mere pastime and the school-room as a toy shop which they visit for pleasure. The young are to be early and impressively taught that there are other and higher purposes of life than mere pleasure and the gratifications of sense. While the first step in education is to bring out into active life, the latent nascent energies of the mind, the second, which is of equal importance, is to teach the pupil how best to control and employ these energies. Habits of fixed attention and concentration of effort should be very early acquired. This is one of the most difficult as well as one of the most important objects to be secured in school. All mental discipline in after life depends very largely upon the early habits that have been formed in concentrating the energies of the mind on any particular object. It is here that two important principles in education come into conflict. When amusement and pleasure are too prominent and form the chief stimulus to effort, but little mental discipline is gained. And also when habits of attention are forced and there are but few incentives to study but compulsion, the chief pleasure that should accompany all acquisition is lost. It is in the harmonious adjustment of these two opposite principles that all true education consists. Mental growth depends as much upon the wise adaptation of the right kind of food suited to its capacity and strength as the body. The

amount of acquisition that is gained in school is very insignificant, when compared with the future additions that are to be made in after life; but the tastes and habits of thought thus formed, when permanent, have a controlling influence on the moral and intellectual character that cannot be overestimated.

It is an indubitable truth that innocent recreation and amusement are necessary for a harmonious development of childhood, and that they cannot be dispensed with, without serious injury. But when the passion for amusement and pleasure is so fostered and cherished in early youth, both by parents and teachers, as to become, in after life, excessive, controlling and absorbing all other motives of action, the most fatal consequences ensue. It is then that moral degeneracy and decay of manhood begin. All history teaches this to be true not only in individuals but in every civil organization.

The active and responsible duties of life, are not, for any consideration whatever, to be under valued or ignored in early education. The only true education is that which best fits a man to perform skillfully, wisely and contentedly all the duties in any sphere to which he may be called, but which also makes him most willing and earnest to discharge these duties.

In order that we may make our Primary schools as efficient as possible, we should have, in the first place, suitable buildings, with ample accommodations, comfortable seats, good light, and more than all, good venti-

lation. That pure air is an indispensable necessity of every school, is not yet fully appreciated. The sacrifice of health to economy will in the end prove a very costly sacrifice. These buildings need not be expensive or ornate; far better to have our school-rooms ample, pleasant, and healthy, well supplied with apparatus, than to have any excess of external ornament.

In the second place, none but our best and most skillful teachers should have charge of these schools—teachers of large experience, of the tenderest sympathies, who know not only what to teach but how to adapt their instruction to the different capacities and tastes of their pupils.

It is thought by many, that any one who has passed through our High and Normal schools, with high rank as a scholar, will, of course, make a successful teacher. This is a great mistake. There are qualifications of mind and heart, absolutely necessary to make a good teacher, that no scholastic training can supply.

This skill and training, which is so invaluable, can be best learned from the advice and example of an experienced teacher. Were a few of our Primary schools, especially those in the suburbs, accommodated with buildings suited for this purpose, and under the charge of teachers of large experience, they would furnish the very best preparation for our candidates who are now anxiously seeking employment. It is a lamentable fact that our Primary schools do often suffer for the

want of just such experience, both in teaching and discipline, as these training-schools would afford. Where there is tact and skill and sympathy in the teacher, the number of truants and absentees is comparatively small.

There is another subject to which frequent reference is made, and which is eliciting some thought and discussion at the present time, that may be briefly noticed. I refer to the comparative advantages of the graded and the ungraded schools. That the graded schools are far more efficient and economical than the ungraded, must be apparent to all who will give their careful attention to this subject.

The evils that are sometimes complained of, are to be attributed to the faults of unskillful teachers rather than to the defects of the system. One of the most common objections is that the classes are often too large, and that there is often too great a difference between the best and the poorest scholars in the same class. When this is the case, the best scholars are kept back when they ought to advance, in order that the poorer ones may keep up with them, or the poorer scholars are hurried over subjects they do not fully understand. Both of these evils will be avoided by every true and skillful teacher. The classes in the different grades should always be small, and only those who are nearly equal in capacity and attainment should be brought together, and whenever a pupil of superior

ability, or who by more earnest application can advance faster than his class, he should be encouraged to do so ; and he should be promoted accordingly. This should be made imperative to every teacher ; and parents, who are supposed to watch carefully the progress of their children, should see that it is enforced.

Inexperienced teachers sometimes err in giving most of their time to class recitations. This is a great mistake. In almost every class there are pupils who need individual and special attention in addition to that given to the class. This should never be omitted. Ambitious teachers who are anxious to teach every subject exhaustively often detain their pupils on unimportant matters, dry details, technicalities, and collateral topics remotely related to what the class is pursuing, and do not aid them in the least, in understanding what is to follow, and is in itself of but little practical value. This is also a grave error in teaching and is not peculiar to any system, but belongs exclusively to the teacher ; while full and clear explanation is absolutely necessary to exact knowledge, it should never take too wide a range or be beyond the comprehension of the pupil. There would be fewer complaints of hard lessons and of severe study, if pupils were not sometimes forced to commit to memory and to recite what they do not fully understand.

It is sometimes contended that in ungraded schools the younger pupils learn many things in listening to

the recitations of the older scholars. This is, to some extent, true; but the knowledge thus gained is vague, fragmentary and loosely connected, and is of but little value in comparison with the systematic knowledge acquired by personal effort, and is fully illustrated in class recitation.

There is, however, no one subject in regard to which the intelligent friends of education and teachers of large experience are more unanimous in their opinion than that the graded system has many and superior advantages over the ungraded.

The revival of business has brought a large number of children into the city, but has not materially increased the number attending school. The demand for work has been so great that very many have left school, especially in the higher grades. In some cases children nine and ten years of age have been taken from school to work. Is not this a serious evil for which there should be some remedy?

The number of pupils in a class is always smaller at the close of the year. The change of grades and classes cannot be wisely made in the middle of a term, but this can be, and always is, adjusted, both in regard to efficiency and economy at the beginning of a new year.

When pupils of unequal attainments and capacity are brought together in a class, one of two evils must inevitably ensue, either the advanced pupils will be

compelled to go over again what they are already familiar with, and thus waste a large amount of valuable time, forming indolent habits, which often continue through the whole school life, or the poorer pupils will be obliged to learn lessons for which they are not prepared, and which they do not and cannot understand. This is a very serious evil which is not fully understood.

The only other alternative is to increase the number of classes, and thus to divide the labor of the teacher, and very materially to diminish the value of his instructions.

Every experienced teacher knows that he can instruct more thoroughly, and with much less labor, a class of fifty, who are constant in their attendance, than a class of forty with a large per cent. of absence. It is also well understood by the best and most successful teachers that a class of thirty-five or forty pupils can be far better taught than a class of fifty and upwards.

It is reported, that in the schools that have of late been so much lauded, that the number of pupils to a teacher does not often exceed twenty-five. This, of course, should make a vast difference in the results.

It is a question of very grave importance to the future welfare of our schools how far efficiency should be sacrificed to economy. It is the unanimous opinion of all successful and experienced teachers that just in proportion as we increase the number of pupils to a teacher over thirty-five or forty we diminish the value

and the thoroughness of the instructions. It is a very easy thing for one without any practical knowledge to theorize and to decide what can and what ought to be done in school, but it is a very different thing to go into the school-room and do what is deemed so very easy.

All the first classes in the different grades have been examined for a promotion to a higher grade. The results of these examinations have never been more creditable to our schools. The examinations for the High School show a marked improvement in comparison with that of former years. While the questions have been more difficult and practical, the per cent. of scholarships is somewhat larger. It is sometimes said by those who form their opinions from individual cases or from irresponsible reports, that while pupils learn in our schools to spell difficult and test words, they often misspell common words. Particular attention has been given to this criticism in the recent written examination for the High School. This examination in history and geography covers nearly five reams of paper, written wholly from memory. These papers have been examined with considerable care, and it is found that, including proper names, geographical and historical, the misspelled words amount to less than one-fifth of one per cent. of the whole number of words written. This I regard as indubitable evidence of the injustice of the criticism.

In some cities the spelling book has been entirely ignored as an useless and unnecessary book in school.



This is one of the many novelties and vagaries that theorists, without experience, are often putting forth under the captivating name of reform. The inevitable results of such unwise changes will be, as has been already, in some instances, a lamentable failure.

We would cordially invite the committee and all others interested in the efficiency of our schools, and who would form an unbiased judgment of school work, to examine for themselves the written tests now in the office of the Superintendent.

As the City Council are now making arrangements for the erection of two or three new buildings, the schools that have suffered for the want of suitable accommodations and proper ventilation will doubtless soon be relieved.

We have registered in all our schools the past term 12,848 pupils, eight hundred more than were admitted last term, and twenty more than were registered a year ago, notwithstanding the large number that have left to attend Catholic schools.

There are in the High School 515 pupils with sixteen teachers; in the eleven Grammar schools, 3,697 pupils and 88 teachers; in the thirty-three Intermediate schools there are 3,175 pupils and 67 teachers, and 5,462 pupils with 101 teachers in the thirty-six Primary schools.

Respectfully submitted,

DANIEL LEACH,  
*Superintendent of Public Schools.*

## REPORT ON EVENING SCHOOLS.

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*To the School Committee of the City of Providence:*

The Standing Committee on Evening Schools present this their annual report for the year 1879-80.

In September last, pursuant to a vote of the General Committee, application was made to the City Council for authority to establish nine ordinary evening schools and one higher school for more advanced pupils, to continue for a term of twenty weeks. But, as in the last year, the application resulted only in authority for the nine ordinary schools for a term of seventeen weeks.

The several schools, with the exception of the one for several preceding winters held on America street, were located at the same places as in the winter of 1878-9, viz.:—at the school-houses on Orms, West River, Meeting, Front, Elm and Oxford streets, at the chapel on Harrison street, and at Unity Hall, Olneyville. Your Committee were unable to hire America street chapel

for the Federal Hill school, and for want of a more convenient location, were obliged to open that school in the Fountain street school-house. The schools began on the evening of October 13th, and, with an intermission of a single week covering the Christmas holidays, continued through the term of seventeen weeks authorized by the City Council, and through two additional weeks under an allowance secured by your Committee from the State Board of Education, reference to which is hereinafter more particularly made. The term commenced with 116 teachers, most of whom had taught in previous winters, and all of whom, with the exception of a few supplementary teachers needed at the opening, were appointed by the Committee on Qualifications upon selection and nomination by your Committee, as by by-law required, and ended with 85 teachers—31 having been discharged from time to time as the attendance fell off.

The whole number of scholars registered was 2,236—fourteen less than in 1878-9. Of these, 1,642 were boys and 594 were girls. The average attendance was 1,020 against 1,048 for the next preceding winter, or 45 + per cent. of the number registered. The entire cost of the schools for the term of seventeen weeks established by the City Council was \$11,511.68, of which \$9,460 were for teachers' salaries, \$858 for rent and janitors' services, \$636.40 for fuel and gas, \$235.32 for books and stationery, and \$321.96 for repairs and other

necessaries incurred in and expended by the Department of Public Buildings.

The subjoined table shows the results of the last winter in comparison with those of the seven next preceding winters. In discipline, order and improvement made, the winter's work compares favorably with that of the other winters included in the table.

It was a source of regret to your Committee that they were unable to secure the chapel on America street or some other suitable place in that locality for the pupils in the Federal Hill district who for three or four winters had crowded the chapel. It was hoped that the school-house on Fountain street, with its much superior accommodations, would attract the greater part of the scholars theretofore attending the Federal Hill school. but in this your Committee were greatly disappointed. For a few weeks there was a fair attendance, but as the novelty of the location wore off the attendance steadily decreased, until most of the teachers required at the opening were discharged, and the school, which in 1878-9, had been the largest in the city became the smallest. More than three-fourths of the pupils in this district live west of Dean street in the Seventh Ward and in the adjacent portions of the Fourth and Tenth wards, and as they are chiefly hard-working and late-working mill operatives, to require them to traverse the long distance to and from the Fountain street school-house for school privileges, is to impose on them a

burden which they not only are not able but ought not to be asked or expected to bear. There is no section of the city in which an evening school is more needed than in this, and it is greatly to be hoped that such accommodations for the coming winter may be secured as will draw out the large numbers of pupils in that locality who so much need and desire the advantages offered by these schools.

It has been the good fortune of your Committee, for the first time, to secure from the State Board of Education an allowance towards the support of our evening schools. Early in the term they received \$500, and, at its close in the spring, \$500 more, thus obtaining for the winter schools a portion of two annual appropriations, with which, under the advice of said Board, they were enabled to continue the schools the two additional weeks hereinbefore mentioned. The first sum of \$500 was placed at interest by your Committee until needed—the interest thereon with the \$1,000, making a total from the State of \$1,010. Of this amount, \$935 were paid for teachers' and janitors' salaries, \$25.78 for rent of hall and gas for the Olneyville school, and the balance amounting to \$49.22, turned over to the Superintendent of Public Schools, who now holds the same on deposit for the coming winter. Your Committee are promised \$500 for the coming winter which, with the balance so on deposit, by advice of the Committee of the State Board, they propose to devote to instruction in drawing.

Your Committee recommend that application be made to the City Council for the establishment of nine ordinary evening schools for a term of twenty weeks.

All which is respectfully submitted for the Committee.

E. C. MOWRY, *Chairman.*

ELISHA C. MOWRY,  
JOHN W. CASE,  
OREN WESTCOTT,  
FREEBORN COGGESHALL,  
FRED. I. MARCY,  
GILBERT E. WHITEMORE,  
JOSEPH F. BROWN,  
*Committee.*

TABLE ACCOMPANYING REPORT OF COMMITTEE ON EVENING SCHOOLS FOR THE YEARS 1879-80.

| SCHOOLS.           | PRINCIPALS.         | WHOLE NUMBER REGISTERED. |       |       |          | Number of Teachers, including Principal, at commencement. | Number of Teachers, including Principal, retained. |
|--------------------|---------------------|--------------------------|-------|-------|----------|---|--|
|                    |                     | Boys                     | Girls | Total | Average. |   |  |
| Olneyville.....    | Clark H. Johnson.   | 340                      | 105   | 445   | 222      | 16  | 16   |
| Meeting Street.... | R. B. Comstock..    | 183                      | 82    | 265   | 149      | 16  | 14   |
| Elm Street.....    | David S. Baker, Jr. | 193                      | 81    | 274   | 113      | 14  | 8  |
| Harrison Street..  | C. A. Aldrich.....  | 152                      | 62    | 214   | 106      | 13  | 12   |
| Fountain Street... | H. C. Pierce.....   | 120                      | 87    | 207   | 104      | 17  | 7  |
| West River Street. | Irving Champlain.   | 136                      | 33    | 169   | 96       | 11  | 8  |
| Front Street.....  | H. S. Babcock....   | 236                      | 76    | 312   | 89       | 11  | 8  |
| Orms Street.....   | Jencks Mowry....    | 107                      | 80    | 187   | 73       | 6   | 6  |
| Oxford Street..... | Geo. T. Brown. ..   | 175                      | 38    | 213   | 68       | 9   | 6  |
| Total ... ..       | .....               | 1642                     | 594   | 2236  | 1020     | 116   | 85   |

| Year.   | Total Enrollment. | Average Attendance. | Per Cent. | Sum expended for Salaries. | Cost per Scholar according to average for 20 Weeks. | Cost per Scholar according to registry for 20 Weeks. |
|---------|-------------------|---------------------|-----------|----------------------------|---|--|
| 1872-73 | 2,566             | 900                 | 35        | 9,454 50                   | \$10 55   | \$3 68   |
| 1873-74 | 2,074             | 835                 | 40        | 9,662 45                   | 11 59   | 4 66   |
| 1874-75 | 2,228             | 993                 | 44        | 10,024 50                  | 10 09   | 4 54   |
| 1875-76 | 2,110             | 970                 | 45        | 11,959 50                  | 12 80   | 5 66   |
| 1876-77 | 2,351             | 1,040               | 44        | 12,367 90                  | 11 89   | 5 26   |
| 1877-78 | 2,693             | 1,302               | 49+       | 14,936 50                  | 11 49+  | 5 54+  |
| 1878-79 | 2,250             | 1,048               | 46+       | 9,406 00                   | 10 55   | 4 91   |
| 1879-80 | 2,236             | 1,020               | 45+       | 9,405 00                   | 10 73+  | 4 94+  |

## REPORT OF COMMITTEE ON HEALTH AND VENTILATION.

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### *Gentlemen of the School Committee :*

There are some things said and done that it were quite as well not to have repeated; there are others also that it would not only be well to have repeated, but reiterated, especially if the matter is of importance, and no impression has been made by any former declaration, however truly and strongly it may have been stated.

The Committee on Health and Ventilation have repeatedly called attention to the great evil arising from imperfect ventilation in a number of our school-houses, in their former reports. If this was an ordinary affair, the little interest manifested might be excusable, but affecting, as it does, the health and welfare of thousands of pupils in our public schools, the whole matter ought not to be passed over so lightly, or so indifferently.

The crowded condition of some of the Primary schools, and the foul air which the pupils are obliged to breathe, especially in so many of them, is truly deplorable. For six hours in a day, and for five days in



a week, are hundreds of the rising generation obliged to breathe this foul and polluted air.

The fresh air provided for more than a hundred in school-rooms in our city, is barely sufficient to keep in good health a dozen inmates,—in which are daily congregated from four to eight times that number,—no wonder there is feverishness, uneasiness and disquietude among the scholars, and headaches and nervous complaints among the teachers.

There is nothing that so surely undermines the health, weakens the constitution, generates bodily infirmities as the constant breathing of impure air. It is no part of wisdom to impair the bodily health in order to improve the mind; of what sort of use is learning or culture, if the loss of physical ability is to be the compensation in its acquirement.

The Committee have visited the school-houses in the third district, where ventilators have recently been put in, and have made a thorough test of their effectiveness in ventilating the several rooms. The first test was involuntary, though convincing, as it was made upon the sense of smell, as we entered the different rooms.

The smoke test was tried, but the smoke did not pass out through the ventilators, as there was but little motion in the air. Tissue paper was also held close to the ventilators; in one building it was observed to move a little, and in the other two scarcely at all. The following questions were put to the teachers, viz.:

Do you perceive any difference in the quality of the air since the new ventilators have been put in ?

Ans. Very little.

Are the children as uneasy and fretful now, as before ?

Ans. Just about the same.

Do you have to drop the tops of the windows to get ventilation ?

Ans. Yes ; down all the time.

Do you open the doors and windows at recess, and is it necessary to do so to change the air ?

Ans. Yes.

Do the pupils ever take cold by having the windows open ?

Ans. Yes, unless cared for.

The Committee also visited the East street school-house, where a new ventilator has been put in use for some time past. On entering the school-room no perceptible difference could be discovered in the quality of the air from that outside the room.

The smoke test was applied, same as in the other houses visited, and the smoke passed through the ventilators. Tissue paper was also tried by holding it to the ventilators ; this test showed that the air was in active circulation. The following questions were then asked of the teacher, viz. :

Do you have to open the windows, or drop the tops in order to get ventilation ?

Ans. No, never.

Do you open the doors and windows at recess to change the air?

Ans. No, it is not necessary.

Don't you have the windows open at all?

Ans. No, unless in warm weather, when it is pleasanter out doors than in.

Do the children ever take cold by sitting near the ventilators, or having them open?

Ans. No more liable than at other times.

It would seem from the statements, as detailed above, that the ventilation in the third district is but little, if any, better than before the new ventilators were put in. The ventilating apparatus in the East street school-house has been in use for some time, has been the subject of many investigations and experiments, and has always proved satisfactory. The invention now in use in the above-named house, can be perfected, in some of its mechanical parts.

It is a well known fact that the laws of nature require for every person four cubic feet of fresh air every minute, and for a school-room containing 75 pupils, 300 cubic feet would be required to pass through the room every minute to keep it in a healthy condition. The ventilating apparatus in the East street school-house fills the above requirement, as has been fully demonstrated.

The Committee have stated the facts just as they found them. They have but one object in view, and

that is to secure the best results. They are of the opinion that it would be well to have another school-house where the ventilation is bad, fitted with ventilators upon the same principle as those in the East street school-house. This would give additional facilities for further investigation of this most important subject.

To carry the above into effect, the Committee present the accompanying resolution, and recommend the passage of the same.

RESOLVED, That the Secretary be requested to petition the City Council to place ventilating apparatus in one or more school houses, upon the same principle as the ventilation in the East street school house, the plans and drawing for the same, to be furnished by the Superintendent of Schools.

Respectfully submitted,

H. H. BURRINGTON, *Chairman.*

LESTER S. HILL, M. D.,

E. KINGMAN, M. D.

# WRITTEN EXAMINATIONS.

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## HIGH SCHOOL. CLASSICAL DEPARTMENT.\*

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### G R E E K .

#### I.

1. Write a participle, and an illustration of each of the moods of *γράφω*, with meaning.
2. Synopsis aorist active system *βουλεύω*?
3. Synopsis present middle system *λούω*?
4. Synopsis aorist passive system *παιδεύω*?
5. Inflect perfect and pluperfect active *δουλεύω*.
6. Inflect perfect and pluperfect middle *κλώω*.
7. Explain and illustrate augment.
8. Principal parts *λύω* with names, separating parts?
9. Translate: *Κύρος καὶ ὁ ἀδελφὸς σὺν τοῖς ἄλλοις παισὶν ἐπαιδεύθησαν.*
10. Translate: The brothers and the other boys will be educated with Cyrus.

#### II.

1. *Πᾶν τὸ θέρος οἱ μὲν μύρμηκες τροφήν συνῆγον, ὁ δὲ τέττιξ ἡὔλει. Ὑστερον δὲ ὁ μὲν χειμῶν ἐγένετο, ὁ δὲ τέττιξ ἐλίμωτε. Τούτου δὲ τοὺς μύρμηκας τροφήν αἰτήσαντος ἐκεῖνοι ἠρώτησαν διὰ ὅτι αὐτὸς τροφήν οὐ συνάγοι. Ὁ δὲ εἶπεν αὐτοῖς*

\* Specimens of examinations held during the school year, 1879-80.

δτι οὐ μὲν σχολάζοι ἀλλὰ ἥδοι. Οἱ δὲ ἐγέλασαν καὶ ἐκέλευσαν αὐτὸν εἰ τῷ θέρει αὐλοῖν τῷ χειμῶνι ὀρχεῖσθαι.

2. Stems of *μύρμηκες*, *τροφήν*, *ἡύλει*, *χειμῶν*, *ἐχεῖνοι*?

3. Give next form to *θέρος*, *τροφήν*, *χειμῶν*, *τούτου*, *αἰτήσαντος*.

4. Inflect *συνῆγον*. Principal parts of *ἡύλει*? Synopsis *ἐγένετο*?

### III.

1. *Κῦρος καὶ Ἀρταξέρξης παῖδες ἦσαν Δαρείου τοῦ τῶν Περσῶν βασιλέως. Κῦρος δὲ ὁ παῖς νεώτερος ὑπὸ τοῦ πατρὸς σατράπης μὲν μεγάλης ἀρχῆς ἀπεδείχθη στρατηγὸς δὲ πάντων τῶν ἐν αὐτῇ ὀπλιτῶν. Ἐπεὶ δὲ ὁ πατὴρ αὐτοῦ ὑπώπτευε τὴν τελευτὴν τοῦ βίου ἀνέβη ἐκ τῆς ἀρχῆς λαβὼν σὺν αὐτῷ φίλον. Τοῦ δὲ πατρὸς ἀποθανόντος καὶ τοῦ πρεσβυτέρου ἀδελφοῦ καταστάντος ἐν τῇ βασιλείᾳ Κῦρος μὲν διεβλήθη πρὸς τὸν βασιλέα ὑπὸ τοῦ φίλου, ὁ δὲ βασιλεὺς συνέλαβεν αὐτόν. Ἀλλὰ οὐκ ἀπέκτεινεν, ἢ γὰρ μήτηρ ἀπητήσατο.*

2. Construction of *στρατηγός*? *Ἐν αὐτῇ* limits what? Give the genit. sing. of *παῖδες*, *νεώτερος*, *σατράπης*, *πάντων*, *αὐτῇ*, *λαβὼν*.

3. Principal parts of *ἀποδείχθη*, *ὑπώπτευε*, *ἀνέβη*, *λαβὼν*, *ἀποθανόντος*?

4. Translate: "Darius, King of the Persians, was the father of Cyrus, and Artaxerxes was his elder brother."

### IV.

1. *Ἐπεὶ Κῦρος ἀπέθανε καὶ οἱ πλεῖστοι τῶν τοῦ Ἑλληνικοῦ στρατηγῶν ἀπολώλεσαν τὰς κεφαλὰς ἀποτμηθέντες, Ξενοφῶν ἐκέλευσεν ἄλλους ἀρχοντας ἐλέσθαι ἀντὶ τῶν ἀποθανόντων, καὶ στρατηγῶν αἰρηθέντων ὁ μὲν Ξενοφῶν αὐτὸς στρατηγὸς ἐγένετο τῶν δὲ ὀπισθοφυλάκων ἦρχε. Καὶ τῶν στρατηγῶν βουλευομένων πολλὰκις ἔλεγε, νεώτατος ὢν, καὶ ἔφη δεῖν τοὺς μὲν τότε*

στρατιώτας μᾶλλον πειθομένους γενέσθαι τῶν πρόσθεν, θαρρεῖν δὲ τὰς μάχας, πάντα μὲν γὰρ τὰ ἀγαθὰ δῆλον ὅτι τῶν κρατούντων εἶναι, χρειττον δὲ εἶναι ἡγῆμόνας ἔχειν τοὺς ἀνδρας ὑφ' αὐτῶν ληφθέντας ἢ Τισσαφέρνην ὃς ἐπιβουλεύων αὐτοῖς φανερός γένοιτο.

2. Change the indirect discourse to direct.

3. Synopsis tense system; ἀπέθανε, ἀπολώλεσαν, ἀποτμηθέντες, ἐλέσθαι.

4. What kind of genitives *Ελληνικοῦ* and *στρατηγῶν*? Construction *κεφαλᾶς*? Reason for case of *ὀπισθοφυλάκων*? Peculiarity in use of *τότε* and *πρόσθεν*? Reason for mood of *γένοιτο*?

## V.

1. Translate:

*M.* Ἦκουσα, ὦ Χείρων, ὡς θεὸς ὦν ἐπιθυμήσεας ἀποθανεῖν.

*X.* Ἀληθῆ ταῦτ' ἤκουσας, ὦ Μένειππε· καὶ τέθνηκα, ὡς ὀρᾷς, ἀθάνατος εἶναι δυνάμενος.

*M.* Τίς δέ σε τοῦ θανάτου ἔρωξ ἔσχεν, ἀνερόδστου τοῖς πολλοῖς χρήματος;

*X.* Ἐρῶ πρὸς σέ οὐκ ἀσύνετον ὄντα. Οὐκ ἦν ἔτι ἡδὺ ἀπολαύειν τῆς ἀθανασίας.

*M.* Οὐχ ἡδὺ ἦν, ζῶντα ὀρᾷν τὸ φῶς;

*X.* Οὐκ, ὦ Μένειππε· τὸ γὰρ ἡδὺ ἔγωγε ποικίλον τι καὶ οὐχ ἀπλοῦν ἡγοῦμαι εἶναι.

2. Principal parts ἤκουσα, ἀποθανεῖν, ὀρᾷς, δυνάμενος, ἔσχεν? .

3. Synopsis same.

4. Inflect ἤκουσα, ὀρᾷς, δυνάμενος, ἔσχεν.

## VI.

1. Translate Xen. Anab. VI., I., 2, 3, 4.

2. Explain tense of *πέμπει*; mood of *εἴη*; construction of *ἀδαιεῖν*; tense of *βουλεύουσιν*; difference in tense of *παρεκάλεισαν* and *ἐδόχουν*.

3. Explain case of *Παφλαγονίας, ἄρχων, ἀνδρῶν, οὖς, οἷς*.
4. Explain force of *παρά* with accusative; accent of *μήτε*; quality of *ι* in *ἀπεχρίναντο*; gender of *τούτων*; antecedent of *αὐτούς*.

## VII.

1. Translate Homer's Iliad II., 517-26.
2. Give the Attic prose forms for *υἱέες, Ναυβαλίδαι, ἔχον, ἄρ, πηγῆς ἐπὶ Κηφίσοιο, ἔποντο, ἔστασαν, θάρησσοντο*.
3. Scan 517. Prove 4th foot. Name spondaic lines.
4. Derivation of *μεγαθύμου, πετρήεσαν, ἀμφενέμοντο*? Account for case of *Φωκῶν*. Where is *ἔστασαν* made?

## VIII.

1. Translate Homer's Iliad, IV., 317-26.
2. Attic prose for *ἰππότα, μέν κεν ἐγών, ὥς ἔμεν, κατέκταν, δόσαν, με, μετέσσομαι, ἰδέ, μύθοισι, τό, ἔμεϊτο, πεποιθασιν, βίηφιν, ἔφατ'*?
3. Stems of *ἡμείβετ', Ἀτρεΐδῃ, ἐθέλοιμι, ἔμεν, κατέκταν, πάντα, θεοί, δόσαν, ἰππεῦσι, παρῴχετο*?
4. Reason for mood of *ἐθέλοιμι*? Explain relative force of *ὥς* and *ὡς*. Supply ellipsis with *ὡς*. Explain tense of *δόσαν*. What form of condition in 321? Explain accent of *ἐστί*.

## GREEK COMPOSITION.

## I.

Good men are pleased when the good are wealthy, but are vexed when the bad are prosperous. They are themselves doing well in doing good to their neighbors, to the whole state, and to every citizen. The same have hands strong in managing well the affairs of their friends, and feet swift in pursuing those who have done them wrong. Many deceive those who love them, and most



persons often deceive their enemies, but the good avoid deception, and they and the wise do not speak evil of the wicked themselves.

## II.

While the Greeks were remaining on the coast of the Euxine, it seemed to Xenophon that it would be honorable to found a city there, so as to secure this district for Greece. The soldiers were numerous, and there were other Greeks living in the neighborhood, who seemed likely to be desirous to be invited to join them. He did not mention the matter to any of the soldiers, but in company with Silanus, who had been Cyrus's soothsayer, he consulted the omens by sacrifice.

## III.

The man who was speaking to the Greeks was acquainted with the country and with the strength of the enemy. He had to tell them what he knew, and so he said that the land embraced fine plains and lofty mountains; that it was not possible to make an entrance in any other place than where they would not be able to pass, if the heights above the road were occupied by the enemy; that he considered the cavalry of the land superior to that of the king himself.

## IV.

The messenger of Zeus bade Agamemnon arm the Greeks for battle, and told him that should this be done he would capture the city. He then departed, and sleep released the king from its embrace. But before arming the soldiery he put them to the test by urging them to depart home. But when they heard this proposition, they at once rushed to their ships and took from under them the props. But Zeus had promised Agamemnon that he should sack Ilium before departing. And yet for nine years he had been fighting men fewer than his own, and no end as yet had appeared.

## LATIN.

## I.

## 1. Translate :

1. We shall obey the laws of the state.
2. You will be praised for your diligence.
3. Does not your friend reside at Rome?
4. The letter which you wrote yesterday will delight your

father.

## 2. Translate Reader, §95, ninth sentence.

3. Principal parts of *consulite*, *prospicite*, *conservate defendite*?

Syntax of *vobis*, *patres conscripti* ?

Conjugate *consulite*.

Decline *nomen* and *salutem*.

## 3. Translate §156 :

4. Principal parts of *raptae erant*, *susceperunt*, *inciderunt*, *posceret*, *petiit*, *darent*, *obruerunt*, *gerebant*? Give the rule for case of *Romae*, for mood of *propinquarent*. *Hanc* refers to what person? Give the rule for mood of *monstraret*, for case of *ei*. Gender of *manus*? Syntax of *scutis*? What is *et*? Why is *gerebant* imperfect? Decline *virgo*, *quod* and *ea*.

## II.

1. Translate Cæsar II., 24, to *simul eorum*.

2. Construction of *armaturae*? What is *una*? Construction of *reciperent*; *hostibus*? Principal parts of *occurrerant*; *petebant*? How many gates had a Roman camp? Construction of *flumen*; *praedandi*? Principal parts of *egressi*?

3. Translate II., 30, *Quibusnam manibus* to 31.

4. Syntax of *Gallis*; *contemptui*? Difference between *paries*, *murus* and *moenia*? Principal parts of *confiderent*?

5. Read at sight IV., 19, to *Suebos*.

## III.

1. Translate Sallust's Catiline, XIII., to line 16.
2. Syntax of *divitiae* and *honori*? Principal parts of *hebescere*? Syntax of *probro*? Explain the meaning of the expression, "*innocentia pro malevolentia—coepit.*" Syntax of *rapere*? How is *sua* used? Syntax of *parvi*? Give the two interpretations of the passage, "*pudorem—habere.*" Syntax of *nihil*? Derivation of *innocentia* and *malevolentia*?
3. Translate XX., "*Ni virtus*" to *Sed quia*.
4. Explain the conditional sentence beginning with "*Ni virtus.*" Explain the phrase "*per ignaviam aut vana ingenia.*" What is meant by "*incerta pro certis captarem*"? What does "*per ignaviam*" express? Explain the construction.
5. Translate at sight:

Venis nunc ad voluptates agricolarum, quibus ego incredibiliter delector; quae nec ulla impediuntur senectute, et mihi ad sapientis vitam proxime videntur accedere.

## IV.

1. Translate:

Quid est optabilius sapientia? quid praestantius? quid homini melius? quid homine dignius? Sapientia autem est, ut a veteribus philosophis definitum est, rerum divinarum et humanarum causarumque quibus eae res continentur scientia.

Sapientissimum esse dicunt eum cui, quod opus sit, ipsi veniat in mentem; proxime accedere illum, qui alterius bene inventis obtemperet. In stultitia contra est. Minus enim stultus est is cui nihil in mentem venit, quam is qui, quod stulte alteri venit in mentem, comprobatur.

2. Account for case of *sapientia*, *homini*, *homine*, *cui*, *inventis*. Compare *melius*, *veteribus*, *proxime*, *minus*, *bene*.

3. Account for mood and tense of *veniat*. Explain derivation and meaning of *optabilis* and *sapientia*. What is the positive of *praestantius* and *sapientissimum*, and from what?

4. Mention some peculiarity of *deos*, *opus*, *nihil*. Principal parts of *continentur*, *dicunt*, *veniat*, *accedere*?

## V.

## 1. Translate :

Manilius de Pompeio imperatore contra reges Asiaticos constituendo legem promulgarat. Cicero pro hac lege orationem ad Quirites habuit. Primum de genere belli dixit; in hoc agi populi Romani gloriam, salutem amicorum, vectigalia maxima, bona multorum civium. Deinde de magnitudine belli dixit; bellum esse ita necessarium ut esset gerendum, non esse ita magnum ut esset pertimescendum. Tunc de imperatore deligendo dixit; unum Pompeium dignum esse qui bello praeficeretur; in imperatore enim quattuor res inesse oportere, scientiam rei militaris, virtutem, auctoritatem, felicitatem; in uno Pompeio summas esse has omnes.

2. Select an illustration of a predicate noun; of an appositive. Form from some word in the passage a derivative like *imperatore*. Nominative singular *vectigalia*, with quantity of penult?

3. Compare *primum*, *maxima*, *multorum*, *necessarium*, *dignum*, *summas*.

4. Principal parts *constituendo*, *promulgarat*, *gerendum*, *pertimescendum*, *deligendo*, *praeficeretur*, *inesse*, *oportere*?

5. Change to Direct Discourse, Indirect Discourse, ending with *praeficeretur*, and translate as Direct.

## VI.

1. In bello inter Cæsarem et Pompeium luctuoso M. Marcellus in Pompeli causa fuerat, in qua etiam Cicero, socius atque amicus suus. Hic autem inter alios a Cæsare victore patriae redditus est,

ille cum victoris iram timeret in exsilio remansit. Sed satis longo intervallo Piso, amplissimus vir, et C. Marcellus, memorabili pietate praeditus, Cæsarem obsecrarunt ut M. Marcellus sedibus majorum redderet, et deprecantibus Marcellum conservandum Cæsar concessit. Ille dies Ciceronis vocem et auctoritatem senatui et rei publicae restituit, idemque diuturni doloris finem attulit. Gratias enim magnas pro omni senatu Cæsari egit, dixitque se et omnes majores etiam habere.

2. Describe *bello inter Cæsarem et Pompeium*.
3. Derivation of *luctuoso*, *etiam*, *amicus*, *victoris*, *memorabili*?
4. Principal parts of *timeret*, *remansit*, *concessit*, *attulit*, *egit*?

## VII.

1. Translate Virgil's *Æneid*, I., 1-20.
2. Scan and prove 1.
3. Stem, genitive, singular and plural of *arma*, *virum*, *moenia*, *casus*, *arces*.
4. Explain peculiarity in meaning or construction of *cano*, *litora*, *terris*, *Latio*, *Italiam*.
5. Principal parts of *cano*, *passus*, *inferret*, *laeso*, *dolens*?

## VIII.

1. Translate Lucretius II., 1-10.
2. What peculiarity in *marî*, *alterius*, *pericli*, *sapientum*; in relative construction in line 4?
3. Scan and prove line 1.
4. Mention and discriminate five synonyms.

## IX.

1. Translate Ovid *Meta.* III., 8-18.
2. Explain the mood of *sit*; tense of *requieverit*; mood of

*condas*. What sort of a derivative verb is *habitanda*? What is the construction of *hac*?

3. Change the Direct Quotation to Indirect after an historical tense.

4. What is the gender of *immunis*? Give the genitive plural of *oracula*, *supplex*, *tellus*, *bos*, *tibi*, *immunis*, *duce*, *gressu*. What determines the gender and number of *illa* (line 13)?

### LATIN COMPOSITION.

#### I.

1. Is that your fault or ours? 2. Whether those cities could be taken, was uncertain. 3. Dumnorix who commanded the cavalry of the Aeduians fled. 4. Let us remember the ancient valor of the Romans. 5. He learned when a boy what deserved to be learned. 6. Where, Labienus, will you cross the river? 7. Fortune often makes those blind whom she favors. 8, 9, 10. Cæsar often said that all Gaul was divided into three parts, but that the Helvetians surpassed the rest of the Gauls in valor, because they contended in almost daily battles with the Germans.

#### II.

Less hesitation is occasioned me, because I retain in memory the facts that you have mentioned. It was not in accordance with our deserts that those things befell us, but we knew of no reason to fear, and did not think that we ought to fear without a reason. But if I were willing to forget this, could I also put aside the recollection of your recent misdeeds? You have attempted a march across the province without my consent; you have harassed the allies of Rome. You boast of your victory, but the gods sometimes grant success to those whom they wish to make sorrow at a change in their fortunes. Still, you shall have peace, if you

give me hostages, and make reparation for the wrongs you have done.

### III.

Large estates had been invested by Roman knights in farming the revenues of Asia. Cicero was by birth of equestrian rank, and on account of this relationship to them they reported to him that their estates were in danger. Letters had been brought them by which they had learned this. Several villages of Bithynia had been burned. A kingdom adjacent to the Roman province was already in the hands of the enemy. The successor of the previous Roman general was not prepared for managing the war. Pompey alone was desired as general by the allies, and was alone feared by the enemy.

### IV.

Pompey possessed remarkable ability as a general. In him were found the important qualifications which are requisite in a perfect commander. In the first place he was a man of the most blameless character. This fact could be best understood and appreciated by comparing him with others. Some generals were in the habit of selling the office of centurion in their armies. The money they drew from the treasury for carrying on the war they divided among their friends, or deposited on interest to gratify their own avarice. Pompey could control an army because he always controlled himself; he could be strict in judging others because he was willing that others should be strict judges in respect to him.

### V.

After Æneas had told them where to meet, and how to proceed to the place, he covered his shoulders with a lion's skin and took

up his father upon his back. His little son grasped his father's hand, and followed along with the short steps of a child, while Creusa, the wife and mother, came behind. They hurried on through the darkest streets, striving to escape the notice of the Greeks. Every rustling breeze filled them with fear, every sound seemed to them the foot-fall of a foe. Æneas even feared, not for himself, but for his companions, though just now no weapons hurled against him, no confronting battalion of the Greeks had daunted him.

## VI.

Priam's regal power had been overthrown, Troy had fallen, and but few of the citizens had survived. These assembled in a valley at the base of mount Ida, and with Æneas as their leader built a fleet, and prepared to seek an abode in some distant land. In the early part of the summer, after the overthrow of Troy, they spread their sails and started forth, undecided where to settle, but with the intention of being guided by such omens as the gods should grant them. Æneas, their leader, took with him under his special protection, besides his little son and his father, the aged Anchises, the images of the household gods of Troy.

## VII.

At some distance from the shore there was a rock which rose above the surface of the water when the sea was calm. On this rock Æneas set up a bough of an oak tree to indicate that in the race the boats were to pass around the rock and return to the starting point. The position of the boats was then determined by lot. The sailors took their seats at the oars and intently awaited the signal. At length a loud blast from the trumpet was heard, and each boat with a cheer from its crew sprang forward toward the goal, while the surface of the sea was plowed into furrows by the beaks and tossed up by the oars.



## VIII.

Jupiter informed the gods what Lycaon had committed and what his punishment had been. He had descended from Olympus and was traversing the lands under human form. He entered the abode of the Arcadian ruler and gave tokens that he was a god. Lycaon said that he would test whether he was a god or a mortal. He roasted and served up on his table the limbs of a human being. Jupiter at once overturned the house over its master's head. As for him, he fled in dismay, but on reaching the country and the forests he was turned into a wolf.

## IX.

The father of the gods feared that if he did not bring aid to the earth in its distress it would utterly perish. There were no clouds to stretch over the lands, no showers to send down upon them from the sky. Therefore poising a thunderbolt he discharged it at Phæthon, and, hurling him from his father's car, checked the fierce fires. The horses in fright sprang apart and wrenched their necks from the yoke, and fragments of the car were scattered far and wide. The driver fell headlong through the air into the river Po. The nymphs of the river consigned his body to the tomb, and indicated on the tomb-stone that Phæthon lay there.

## LATIN GRAMMAR.

## I.

1. Explain the demonstratives of the three persons.
2. Explain use of *hic* and *ille* in reference to two objects previously mentioned.
3. Translate: *What do you see? What animal do you see?*
4. The indefinite pronouns *quis* and *qui* are used after what particles?

5. Use of *quisquam* and *ullus*?
6. *Nullus* is the negative of what, and is how used?
7. *Deus omnia constituit*: change to passive construction.
8. State the uses of the present tense.
9. State the force of the present with compounds of *jam*.
10. State the force of the present with *dum* (while).

## II.

1. Give the general rule for the arrangement of words in a Latin sentence. Explain emphasis by separation.
2. Give stem endings and genitive endings in the five declensions. Inflect *deus*.
3. Inflect *tussis*, *ignis*.
4. Give gender of *turbo*, *marmor*, *lex*, *fons*, *palus*. Give meaning of *gratia* and *rostrum*, with form and meaning(s) in plural.
5. Compare *facilis*, *propior*, *maledicus*. Inflect Act. Subj. Imperf. of *rego*. Give synopsis of *audio* in Pass. Indic. 2d Plural.

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## HISTORY.

1. Name the three branches of the Caucasian race. What other nations are kindred to the English? How is their unity proved? To what branch belong the ancient Egyptians? the Hebrews? the Phœnicians? the Assyrians? the Hindoos? the Persians?
2. Give a geographical sketch of the ancient monarchies of Asia.
3. State the antiquity of Egyptian history. Describe the principal feature of the physical geography of Egypt. Describe Egyptian architecture, naming some of the most important specimens. What peculiarities in the Egyptian religion?

4. What three successive kingdoms arose in the Tigris-Euphrates basin? What science was especially cultivated by the Chaldeans? Locate and describe the city of Babylon. What four periods in Jewish history? What was the mission of the Jews?

5. Describe the primitive seat of the Aryan race. Describe the system of *caste* among the Hindoos. What was the ancient language of the Hindoos and what are the most important remains of its literature? What noted remains of ancient Indian architecture?

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### ALGEBRA.

1. Define a *quadratic equation*. Define a *pure quadratic equation*. Define an *affected quadratic equation*. Give rule for solution of an *affected quadratic equation*.

2. Solve:  $\frac{\sqrt{3x^2+4}+2}{\sqrt{3x^2+4}-2} = 3$

3. Find two numbers which are in the ratio of 3 to 7, and the sum of whose squares is 232.

4. Solve:  $3x^2-27-6x=14x-2x^2+33$ .

5. Solve:  $\frac{x-3a}{b} = \frac{9(b-a)}{x}$ .

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### GEOMETRY.

1. Construct a triangle equal to a given octagon.

2. To what is the sum of the squares of the sides of a parallelogram equal? Give the proof.

3. Given a regular circumscribed polygon, and a similar inscribed polygon, to construct a regular circumscribed polygon of double the number of sides.

4. How do the diagonals of a rhombus intersect? Give the demonstration.

5. If, from any point in the base of an isosceles triangle, parallels to the equal sides be drawn, show that a parallelogram is formed whose perimeter is equal to the sum of the equal sides.

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F R E N C H .

1. Translate: Tout-à-coup elle aperçut les débris d'un navire qui venait de faire naufrage, des bancs de rameurs mis en pièces, des rames écartées çà et là sur le sable, un gouvernail, un mât, des cordages flottant sur la côte; puis elle découvrit de loin deux hommes, dont l'un paraissait âgé; l'autre, quoique jeune, ressemblait à Ulysse. Il avait sa douceur et sa fierté, avec sa taille et sa démarche majestueuse. La déesse comprit que c'était Télémaque, fils de ce héros; mais, quoique les dieux surpassent de loin en connaissance tous les hommes, elle ne put découvrir qui était cet homme vénérable dont Télémaque était accompagné. C'est que les dieux supérieurs cachent aux inférieurs tout ce qui leur plait; et Minerve, qui accompagnait Télémaque sous la figure de Mentor, ne voulait pas être connue de Calypse.

2. Infinitive of *aperçut*, *venait*, *mis*, *écartées*, *flottant*, *avait*, *surpassent*, *comprit*, *était*, *connue*?

3. Inflect *aperçut*, *venait*, *comprit*, *surpassent*, *était accompagné*.

4. Translate: Vessels which had just been seen in the distance resembled those by which his had been accompanied.

## EXAMINATION OF FOURTH CLASS FOR PROMOTION.

## LATIN.

1. Write in Latin: The consul came to Rome. The city must be saved.
2. He was a man of great virtue. He would have been at home. We enjoy many things. He reigned seven years.
3. He was desirous of praise. Pity the labors of the man. We were at Athens.
4. Give the rule for the Ablative in Special Constructions; for clauses with *quod*, *quia*, etc.
5. Translate Cæsar II., 4, to *qua ex re*.
6. I., 15, to *qui cupidius*.
7. Inflect all nouns and pronouns in the first three lines.
8. Give the principal parts and synopsis of *movent* and *præmittit*.
9. Give the comparison of all the adjectives in the three lines.
10. Explain the subjunctives *videant* and *faciant*.
11. State and explain the case of *die*, *castra*, *equitatum*, *millium*, *provincia*, *Aeduis*, *hostes*, *iter*.
12. Change to the direct discourse in Latin: *eo sibi minus—to atque eo gravior*.

## HISTORY.

1. Describe the capture of Rome by the Gauls.
2. Describe the siege of Carthage.
3. By what battles (where fought) did Cæsar establish his supremacy over the Pompeian party?
4. Name the classical countries on the west coast of Europe, including insular divisions.
5. Name the islands in the Ionian sea.

## ALGEBRA.

1.  $\frac{1+x}{1-x} - \frac{1-x}{1+x} = ?$
2.  $\frac{a^{-2}b^2}{x^{-2}y^3} \times \frac{b^{-3}}{a^{-2}} = ?$
3. Reduce to lowest terms  $\frac{n^3-2n^2}{n^2-4n+4}$ ;  $\frac{5b^2-10b+5}{7b^2-7}$
4. State the four principal steps in the solution of a simple equation.
5. Solve:  $\frac{3x}{5} + 2\frac{1}{2} + 11 = \frac{x}{4} + 17.$

## ENGLISH AND SCIENTIFIC DEPARTMENT.

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### POLITICAL ECONOMY.

1. Distinguish between productive and unproductive consumption, with Bastiat's illustration.
2. Define capital. Explain the service which it renders to production.
3. Define money. What qualities should be possessed by the substance selected as money?
4. What qualities characterize every article which has an exchange value? Give explanations and illustrations.
5. Does the cost of labor vary with the amount of wages? Give explanations and illustrations.
6. Do high prices of articles necessarily produce high wages? Explain.
7. Define wages, rent, and profits. Of what three elements is the last composed?
8. What are "strikes" and "lock-outs"? What plans have been proposed for preventing them?
9. In what way is the supply of an exported article made equal to the demand?
10. Is an income tax direct, or indirect? If uniform, on what class of persons does it fall most heavily? In what countries may it be imposed with the least inconvenience?

### ASTRONOMY.

1. Explain the difference between a sidereal and solar day. Find, by the globe, the sidereal time at 12 m., solar time, to-day.

2. Explain Foucault's pendulum experiment. Compute the number of degrees change per hour in latitude  $20^{\circ}$ . State, briefly, the second direct proof of the earth's rotation.
3. Explain the cause of the change of seasons.
4. Give the distance, apparent diameter, real diameter, and horizontal parallax of the sun and moon. State how each is obtained.
5. Give Kepler's three laws. Explain, briefly, the first and third.
6. What are the photosphere, chromosphere, rose-colored protuberances, and corona of the sun? Also, zodiacal light.
7. Give the names of the principal planets in the order of their distance from the sun. Write against each its number of moons, approximate diameter, and sidereal period.
8. Describe Mars. Compute the mean greatest elongation of the earth as seen from Mars.
9. State the facts known about the November meteors, and the theory proposed to account for these facts.
10. Describe Taurus and Ursa Major.

#### ENGLISH LITERATURE.

1. Give some account of two Anglo-Saxon prose writers and their works.
2. Describe the old English ballads, with a more minute account of two of them?
3. Give a brief account of Shakespeare's life, with an outline of one of his works.
4. Give an account of the life and works of Francis Bacon.
5. Name the authors of the period of the Restoration, with their works, and the department of literature in which each of them wrote.
6. Give an account of the works of Jonathan Swift.



7. Give an account of the life of Oliver Goldsmith. Name five of his works, and give an account of one of them.

8. Give the full names of ten English poets who were living at the close of the reign of George III. (1820), with one work of each.

9. Give an account of the life of Thackeray, and name five of his works.

10. Name the author of each of the following works, and state the department of literature to which it belongs: "Lycidas," "The Talisman," "House of Fame," "Temple of Fame," "Charles V. of Germany," "Old Curiosity Shop," "Madoc," "Four P's," "Progress of Poesy," and "Roderick Random."

#### ENGLISH ETYMOLOGY.

Give the derivation, history, and present meaning of the following words:

- |                  |                |
|------------------|----------------|
| 1. Barbarian.    | 9. Mizen.      |
| 2. Curfew.       | 10. Monk.      |
| 3. Cynic.        | 11. Nominal.   |
| 4. Duplicate.    | 12. Philippic. |
| 5. Daisy.        | 13. Petrel.    |
| 6. Eulogy.       | 14. Quart.     |
| 7. Gentleman.    | 15. Suburb.    |
| 8. Interjection. | 16. Salary.    |

17. Give the history and meaning of the suffixes *ster* and *ess*, with examples of each.

18. Give the meaning of the Saxon suffix *ish*. Apply it to knave, fool, skit, and blue, with spelling rules.

19. Give five Latin suffixes, meaning *one who*, or *that which*, with examples.

20. Give the meanings of the Greek prefixes *a* and *syn*, with examples.

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**CONSTITUTION OF THE UNITED STATES AND RHODE ISLAND.**

1. Define the different forms of government, and apply the principles to England and the United States.
2. Write Art. I., Sec. 3, Cl. 1. (Composition of the Senate.) How are Senators elected, according to the law of 1866?
3. Write Art. I., Sec. 8, Cl. 4. Give the steps required by law for naturalization.
4. Give an analysis of Art. II., Sec. 1.
5. Write and discuss Art. IV., Sec. 2, Cl. 2. (Fugitives from justice.)
6. Write Amendment X. (Delegated powers.) How is it often incorrectly quoted, and why?
7. How many amendments have been proposed by the Congress, but not ratified? Give the substance of two of them.
8. What officers constitute the cabinet of the President, and how are they appointed? Where are they referred to in the Constitution?
9. What are the provisions of the Constitution of Rhode Island in reference to the power of the Governor to adjourn and convene the General Assembly, and in regard to vacancies in the office of both Governor and Lieutenant Governor?
10. Give the provisions of the Constitution of Rhode Island in reference to impeachment, and compare with the Constitution of the United States.

**GEOLOGY.**

1. Give the scale of hardness. Describe numbers one, six, and ten.
2. Classify and describe mica schist, scoria, stalagmite, conglomerate, and concretion.
3. What is the clinometer, and for what is it used?
4. Describe erosion by glaciers.

5. What are the common methods by which veins have been made?
6. Describe formations, fossils, and special evidences of geologic changes found in Rhode Island.
7. Give the age of the different mountain chains of North America, with the method by which it is determined.
8. Describe the stigmara, cave-bear, moa, pterodactyl, and orthoceras. State the class to which each belongs, and the ages in which it lived.
9. Give the general characteristics of the carboniferous age, and the distribution of carboniferous rocks in North America.
10. Give the kinds and distribution of rocks of the cretaceous period.

## CHEMISTRY.

1. How may nitrogen be obtained? What are its properties? Where does it exist in nature?
2. How are the two lowest oxides of nitrogen made? Give equation for one. Compare the properties of the two. Give the graphic formula and vapor density of each.
3. What is allotropism? Give four examples, with mode of preparing one.
4. How is sulphuretted hydrogen made? Give equation. What is its action on solutions? Give one equation.
5. State the properties and uses of carbon bisulphide. Write the equation for burning it.
6. Name the sources and uses of carbolic acid, picric acid, anthracene, alizarin, and kreasote.
7. Explain the principle of the solubility of the carbonates of calcium and magnesium. Apply to hard and soft water, stalactites and stalagmites.
8. Explain the mode of precipitating the iodides of mercury, with colors and equations. Give the graphic formulas of the two iodides, with exact chemical names. Calculate the number of

pounds of mercury in 80 pounds of mercuric iodide. [Hg, 200 ; I, 127.]

9. Compute the number of pounds of silver in 25 kilograms of lunar caustic. Which contains the largest percentage of silver, lunar caustic, or horn silver? [Ag, 108.]

10. Give the formulas and common names (if any) of acetic acid, cupric sulphate, mercurous chloride, methyl hydrate, calcic sulphate, sodium perbromate, magnesium sulphate, potassium sulphite, plumbic sulphuret, and ferrous sulphate.

#### TRIGONOMETRY.

1. Find the value of  $\left( \frac{2887.05 \times .0054}{.028 \times 27.154} \right)^{\frac{2}{3}}$

2. Given the perpendicular of a right-angled triangle equal to 2.269 rods, and the base equal to 126.9 rods; to solve the triangle.

3. Given two sides of a triangle equal to 80 yards and 142.6 yards, and the angle opposite the second side equal to  $96^{\circ}$ ; to solve the triangle.

4. Given the three sides of a triangle equal to 30, 40 and 60 yards, respectively; required the segments of the base.

5. Define the cotangent and secant of an arc, and draw these functions for an arc terminating in the third quadrant. Define the supplement of an arc and analytical trigonometry.

6. Define a logarithm. Prove the rule for involution and evolution by means of logarithms.

7. Write and prove the formula for finding the cosine of an angle of a right-angled triangle.

8. When two sides and an angle opposite one, in an oblique-angled triangle, are given, state when there will be no solution, when one solution, and when two solutions.

9. Prove that the sides of a plane triangle are proportional to the sines of their opposite angles.

- 10 Find the numerical values of the sine, cosine, and tangent of an arc of  $45^\circ$  in terms of the radius.

GEOMETRY.

1. Define a trapezoid, a ratio, a polyedral angle, a zone, and a spherical segment.
2. Define the following terms: an axiom, a rhomboid, frustrum of a pyramid, sector of a circle. Name the regular polyedrons.
3. Book I., Prop. XXV. To what is the sum of the angles of a triangle equal? Prove it.
4. Demonstrate Prop. XVIII., Book III., the measure of an inscribed angle.
5. Demonstrate Prop. XI., Book IV., the square on the hypotenuse of a right-angled triangle.
6. Book V., Prop. XVI. Find an expression for the area of a circle in terms of the radius.
7. Book VI., Prop. XX. The sum of the plane angles formed by the edges of a polyedral angle is less than four right angles.
8. Book VII., Prop. XX. Prove that similar polygons are to each other as the cubes of any homologous lines.
9. Write the formulas for the surface and volume of the frustrum of a cone, and for the convex surface and volume of a cylinder.
10. Find the volume of a sphere whose radius is five feet.
11. Find the area of a zone on a sphere with a radius of eight feet, the altitude of the zone being two feet.

RHETORIC.

1. Punctuate the following sentences, giving the rule for each point used:—
 

“Cherish true patriotism which has its root in benevolence”

“There is joy for his fortune honor for his valor and death for his ambition”

“They conquered but Bozzaris fell  
Bleeding at every vein”

2. State Campbell's law of the use of language, and the law of verbal formation. Define periodic sentence. Give the general rule for the use of the several kinds of sentences. Make the following periodic :

“They despised all the dignities of the world, confident of the favor of God.”

4. Give two ways by which ambiguity in the construction of sentences is produced. State Quintillian's rule about ambiguity. Correct the following: “Are these designs, which any man, who is born a Briton, in any circumstances, ought to be ashamed of?”

5. How may strength or vividness be secured in the construction of sentences? What is faulty in “He took it from, and would not return it to the child.”

6. In what do simile and metaphor resemble each other, and in what do they differ?

7. How may the sublime in writing be produced?

8. Define alliteration and rhyme at the end of a word, giving the rules for each. Explain the rhyme in :

“The splendor falls on castle walls,  
And snowy summits old in story.”

9. Give the kinds of verse in the following :

“I will go to my tent and lie down in despair.”

“War, he sung, is toil and trouble.”

“Hail to the chief who in triumph advances.”

“The Turk lay dreaming of the hour.”

10. Give and explain the chief points of excellence to be aimed at in the writing of news. What is an editorial?

#### HEAT AND ELECTRICITY.

1. Describe the thermometer. Change 270° C. to F.

2. What is meant by the absolute zero of temperature? If a

certain quantity of gas measures 20 litres at  $-20^{\circ}\text{C.}$ , what will it measure at  $200^{\circ}\text{C.}$ , the pressure remaining the same?

3. Define latent heat, specific heat, and thermal unit. How many thermal units will be required to raise 20 lbs. of water from  $20^{\circ}\text{C.}$  to steam at  $120^{\circ}\text{C.}$ ?

4. In what ways may heat be diffused? Explain each.

5. What are dip and variation of the magnetic needle?

6. What is electrical induction?

7. Describe the Leyden jar, and give the principle on which it acts. How is it charged and how discharged?

8. How may a gas pistol be fired by frictional electricity, and how by galvanism?

9. Describe Grove's battery, and trace the current.

10. Describe electrotyping.

#### NATURAL PHILOSOPHY.

1. (1) Define and illustrate the inertia of matter; (2) name and define the three conditions of matter.

2. (1) Give the laws of falling bodies; (2) a body passed over 1029.12 feet during its fall, what was the time required?

3. (1) Define the centre of oscillation of a pendulum; (2) how long must a pendulum be to vibrate in  $2\frac{1}{2}$  seconds?

4. (1) Give the law of a train of wheel work; (2) the radius of a wheel is 1 m., that of its axle 4 cm., the weight is 80 kg.; how great a power will be required to support it?

5. (1) State Archimedes' principle; (2) a piece of lead is balanced in water, a piece of wood which weighs 130g. in air is then tied to the lead, when it is found that it requires a 70g. weight to restore equilibrium in the balance. Find the specific gravity of the wood.

6. (1) Give the law for lateral pressure of liquid; (2) find the pressure on a dam in 8 m. of water, the dam being 15 m. in length.

7. (1) State Mariotte's law in regard to gases, and give experimental verification of it; (2) when the mercury is at a level in the two arms of a Mariotte's tube the column of air in the short arm is three inches in length; how much higher will the mercury be in the long arm than in the short arm when the air column is one inch in length?

8. (1) Explain the force pump with a continuous flow; (2) at what height may the piston of a perfect lifting pump be placed above a liquid, with a specific gravity of 1.35, in order to raise the liquid when the barometer stands at 29.5 inches?

9. (1) Define fundamental tones and overtones; (2) if 18 seconds intervene between the flash and report of a gun, what is the distance of the gun from the observer, temperature being 82° F.?

10. (1) What is the velocity of light and how ascertained? (2) What is meant by the principal focus and the conjugate foci of a concave mirror?

#### ALGEBRA.

1. (1) What advantages has the literal notation over the decimal? (2) Define a coefficient, an imaginary quantity, an equation, an affected quadratic equation.

2. Add

$$3(a-c)(x+y)^{-\frac{1}{2}}, \frac{a}{(x+y)^{\frac{1}{2}}}, \frac{a}{\sqrt{x+y}} \text{ and } 5(a+c)(x+y)^{-\frac{1}{2}}.$$

3. Find the highest common divisor of  $4xy^3 - 2y^3 + 6x^2y$  and  $4x^2y + 8x^3 - 4xy^2$ .

4. (1) Expand  $(x^2 - 2y)^5$  by the binomial formula; (2) when does the expansion of a binomial terminate, and why?

5. Find the cube root of  $y^6 - 3y^5 + 5y^3 - 3y - 1$ , and explain the process.

6. Find the values of the unknown quantities in  $\frac{x}{3} + \frac{2y}{5} = 6$ , and  $\frac{2x}{3} + \frac{y}{5} = 6$ . Verify.



7. Solve  $\frac{\sqrt{x+28}}{\sqrt{x+4}} = \frac{\sqrt{x+38}}{\sqrt{x+6}}$ .

8. A and B together can perform a piece of work in 8 days, A and C, in 9 days, and B and C, in ten days; in how many days can each alone perform the work?

9. A farmer purchases 100 acres of land for \$2,450; for a part of the land he paid \$20 an acre, and for the other part \$30. How many acres were there in each part?

10. There are two fields in the shape of exact squares, and it requires 200 rods of fence to enclose both. The contents of these fields are 1300 square rods. What is the value of each, at \$2.25 per square rod?

#### HISTORY.

##### GREECE AND ROME.

1. Describe the Greek colonies in Asia Minor.
2. Describe the laws of Draco and Solon.
3. Describe the battle of Marathon.
4. Describe Alcibiades and the Syracusan expedition.
5. Describe Alexander's expedition to India.
6. Describe Hannibal's campaign in Italy.
7. Describe the four factions in Rome after the death of Sulla.
8. Describe the conquests of Cæsar from Pharsalia to Munda.
9. Describe the battle of Actium and fate of Antony.
10. Describe the conversion of Constantine.

##### MEDIEVAL AND MODERN HISTORY.

1. Describe the coronation of Charlemagne and the extent of his dominion.
2. Describe the Latin kingdom of Jerusalem.
3. What advantages did the people of England obtain during the reigns of John and Henry III.?
4. Describe the circumnavigation of Africa.
5. Who was Charles V. and what were his dominions?

6. Describe the events in the Netherlands under William the Silent.
7. How did Henry of Navarre obtain the crown of France, and what was the character of his reign?
8. Name and describe the greatest naval exploit during the reign of Elizabeth.
9. What were the leading characteristics of Charles I., Oliver Cromwell, Charles II., James II., and William III.
10. State the causes and results of the two Spanish wars of Louis XIV.

#### MODERN HISTORY.

1. Describe the character of George II. and George III.
2. Tell how Peter the Great warded off and defeated Charles XII.
3. State the cause of the first Silesian war of Frederick the Great, and the cause of the Seven Years' War.
4. Describe the power and fate of Robespierre.
5. Describe the battles of Austerlitz and Trafalgar.
6. What became of Napoleon after Waterloo?
7. Describe the repeal of the corn law in England.
8. Describe the coup d'etat of Napoleon III.
9. State what Cavour and Garibaldi did for the unification of Italy.
10. Describe the battle of Sedan and capture of Metz, and the effect of the war upon Napoleon III. and William I.

#### PHYSIOLOGY.

1. Describe the skeleton.
2. " " perspiratory glands.
3. " " fats or oils.
4. " intestinal digestion.
5. " the capillaries.

6. Describe the lungs.
7.     "     "     spinal cord.
8.     "     "     nerves of the tongue.
9.     "     "     humors of the eye.
10.    "     "     external ear.

BOOK-KEEPING.

1. When a bill receivable is received, is it to be debited or credited, and why? When a bill payable is given, is it to be debited or credited, and why? What accounts close into the profit and loss account? How is the profit and loss account closed? What does it show?

2. Define journal, ledger, bank book, bill book and draft.

3. Make the proper entries in single entry for the following:—  
 (1) Oct. 7th, 1879, sold to H. Todd 20 bbls. of flour @ \$7.50, and received \$50.00 cash on account; (2) Oct. 8th, 1879, gave Samuel Mathews, to balance my account, an accepted draft on Charles Bishop for \$116.00; (3) Oct. 9th, 1879, discounted bills payable Nov. 4, in favor of Peyton Gardner, due Dec. 20th, \$800.00; gave our check for the net amount on the First National Bank.

4. Write the above draft, note and check, taking for our name Charles S. Walker & Co.

Journalize the following:—

5. Oct. 12th, 1879. Shipped per steamer Washington, and consigned to William Waterby, Mobile, mdze. from store amounting to \$3,000; mdze. bought by check on the First National Bank, \$800.00; and mdze. bought of James Reed for our note at four months, \$2,200.00.

6. Oct. 20th, 1879. The First National Bank has discounted Belden & Jones' note, my favor, for \$1,000.00, at 90 days, which note Belden & Jones gave me this day for my note of like time and amount.

7. Oct. 21st, 1879. I sold to Oscar P. Lewis,  
 15 pieces of Wm. Brown's goods, - - \$3,570.00  
 600 yds. of silk from sales for Co. A, @ \$2.00.  
 My own merchandize per S. B., - - 260.00  
 Received in payment my note (now due) passed in Sep-  
 tember last to S. K. Randall, for - - 500.00  
 Oscar P. Lewis' order, my favor, at sight on Isaac  
 Howell for - - 3,000.00  
 and the balance in cash.

8. Nov. 1st, 1879. Shipped per the Arizona, Wright, master,  
 and consigned to Charles Elliott & Co., N. O., to be sold on our  
 account and at our risk, 250 bbls. flour @ \$5.00, and 80 bbls. beef  
 @ \$9.75. Paid drayage in cash, \$15.50. Passed our note at 30  
 days to the Atlantic Insurance Company for insurance (to cover  
 all loss) @ 1½ per cent. and policy \$1.00.

9. Take a trial balance and close the following :

| DR.       |          | CHARLES S. WALKER & CO. |          |           |              | CR. |             |
|-----------|----------|-------------------------|----------|-----------|--------------|-----|-------------|
| 1879.     |          |                         |          | 1879.     |              |     |             |
| Dec. 8th. | To cash, | 82                      | \$800 00 | Jan. 1st. | By sundries, | 1   | \$16,000 00 |

| DR.        |             | PROFIT AND LOSS. |          |            |             | CR. |            |
|------------|-------------|------------------|----------|------------|-------------|-----|------------|
| 1879.      |             |                  |          | 1879.      |             |     |            |
| Dec. 31st. | To expenses | 5                | \$300 00 | Dec. 31st. | By mdze.,   | 3   | \$3,000 00 |
|            |             |                  |          | " "        | " interest, | 6   | 80 00      |

| DR.        |               | BALANCE. |            |            |                   | CR. |            |
|------------|---------------|----------|------------|------------|-------------------|-----|------------|
| 1879.      |               |          |            | 1879.      |                   |     |            |
| Dec. 31st. | To cash,      | 4        | \$4,000 00 | Dec. 31st. | By bills payable, | 7   | \$1,000 00 |
| " "        | To J. Cooke   | 8        | 8,000 00   | Dec. 31st. | By S. Lowe,       | 14  | 820 00     |
| " "        | " bills rec'd | 9        | 1,800 00   | " "        | G. R. Grant,      | 17  | 1,000 00   |
| " "        | " R. Cory,    | 10       | 2,000 00   |            |                   |     |            |
| " "        | " mdze.,      | 3        | 10,000 00  |            |                   |     |            |

10. Make a balance sheet from the following trial balance :

|                   | DR.        | CR.        |
|-------------------|------------|------------|
| Thomas H. Reid,   | - - -      | \$5,500 00 |
| Merchandize,      | \$4,000 00 |            |
| Cash,             | 2,000 00   |            |
| Adv. to Mobile,   | 500 00     |            |
| Expenses,         | 200 00     |            |
| Bills payable,    | - - -      | 1,575 00   |
| Bills receivable, | 300 00     |            |
| Joseph Peters,    | 75 00      |            |

Inventory of merchandize is \$5,875.00.

" " adv. to Mobile, 400.00.

[13]

## GIRLS' DEPARTMENT.

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### FOURTH YEAR—SENIOR CLASS.

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#### MENTAL PHILOSOPHY.

1. Who is considered the father of modern philosophy? What did he regard as the fundamental principle of psychology?
2. State the existences that Locke considered that we know and his belief in respect to the source of knowledge.
3. What is Hamilton's teaching in respect to matter as cognized by us?
4. Define idealism and nihilism. Name the advocates of each.
5. Name certain intuitive ideas, stating the reason for their assertion.
6. Does perception give us a knowledge of individuals or classes?
7. Describe the condition of a person without the power of abstraction.
8. Contrast metaphysical and practical reasoning.
9. Define imagination. Illustrate the difference between a prosaic statement of a fact and a poetic one.
10. Give your opinion of the value of this study.

#### ASTRONOMY.

1. What bodies constitute the solar system? State the distance from the sun of the most remote; the linear distance between the orbits of Jupiter and Saturn; the time required for light to reach the earth? to reach Saturn?

2. Does the size of the sun always appear the same? What is meant by the sun's being on the meridian? What by its being at the vernal equinox?
3. Are the same stars seen at different seasons of the year? Reason for answer. Name eight first magnitude stars and the constellations in which they are.
4. Explain why the earth is divided into zones.
5. State the path of the moon compared with that of the ecliptic; its time of rotation, and its synodic revolution.
6. What is meant by the altitude of a star? by its declination? What is the altitude of the north star in this latitude? at the pole?
7. Name the planets now visible in the evening and describe them.
8. To what is twilight due? In what part of the earth is it longest? where shortest?
9. Describe three remarkable comets.
10. State the two reasons why time is not reckoned by the sun.

## GEOLOGY.

### I.

Classify rocks according to their mode of formation; according to their constituents. Describe one of the latter division.

### II.

Explain concretionary structure, giving illustrations.

### III.

Describe coral animals, stating the conditions necessary for their growth.

### IV.

Describe each of the following, stating the age when found: trilobite; ganoid fishes; ammonite; pterodactyl; xiphodon.

## V.

Name the division of the vegetable kingdom first introduced State when angiosperms were introduced. Name the different vegetable species that have made large formations.

## VI.

Name the oldest portions of the United States; the latest formed. To what age do Rhode Island rocks belong? Give the age of the Appalachian Mountains.

## VII.

State the belief in respect to the climate of the globe in pre-historic time.

## VIII.

State the proofs of the oscillations of North America during the Quarternary age.

## IX.

Give the evidences that geology furnishes of man's antiquity and of his manner of living.

## X.

State the manner in which geological work is now being done.

## PARADISE LOST.

1. Describe the political condition of England during Milton's time, and state his connection with the affairs.
2. State the influence of the Bible upon the style of the Puritan authors.
3. Give the argument of the two books read by the class.
4. Give a selection of about ten lines, stating its subject and connection.
5. To what class of poems does Paradise Lost belong? What is the measure?



## MORAL SCIENCE.

1. Distinguish between the spontaneous and the voluntary activities.
2. Contrast the moral and the natural affections.
3. When does Dr. Hopkins consider the right to life is forfeited?
4. State the ways for acquiring property, directly and indirectly.
5. State the duties of parents to children.

## LATIN.

## THE ÆNEID—BOOK IV.

## I.

Give the argument of the Fourth Book.

## II.

Line 451. Subject of *taedet*.

“ 452. Reason for mode of *relinquat*.

“ 454. With what does *horrendum* agree?

“ 456. Principal parts of *effata*.

“ 461. Construction of *visa*.

## III.

Lines 465–473. Translate, beginning with *agit*.

## IV.

Explain the allusions in the above passage.

## V.

Lines 504–511. Translate.

## VI.

Line 509. Construction of *crines*.

“ 511. Explain “*tergeminam Hecaten*.”

## VII.

Lines 550–560. Select five different examples of the subjunctive and explain each.

## VIII.

Lines 612-620. Translate, beginning with *si*. Give anecdote in connection.

## IX.

Line 658. Explain mode of *tetigissent*.

" 659. Give mode and tense of *moriamur*.

" 660. Explain mode of *moriamur*.

" 669. Construction of *quam* and *si*.

## X.

Lines 693-705. Translate. \

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SECOND CLASS—THIRD YEAR.

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GEOMETRY.

1. Define point, line, surface, plane, solid; name the angles formed when a straight line cuts two parallel lines.
2. State theorems showing what is the surface of a circle and of a sphere.
3. Prove that a line parallel to one side of a triangle divides the other sides proportionally.
4. Show what results, when, in a right triangle, a perpendicular is drawn from the vertex of the right angle to the hypotenuse. and state corollaries.
5. What are similar figures, and what ratios belong to them?
6. How are angles measured?
7. Prove that an infinitely small chord coincides with its arc.
8. Show how to find the centre of given circumference or of a given arc.

9. Given, chord 10 inches long in a circle whose diameter is 30 inches; how long is the chord of half the arc?
10. Find the volume of a sphere whose diameter is 30 inches, and state theorem in proof.

CHEMICAL PHYSICS.

1. Tell how the freezing point is determined for thermometers.
2. What is cold? What is meant by the absolute zero of temperature?
3. Define ebullition and explain the singing of water before boiling.
4. When a body is heated, in what two ways is the heat energy employed?
5. Explain how and why large bodies of water affect the climate of the neighboring land?
6. What are the essential parts of a steam engine?
7. Explain the charging of a Leyden jar.
8. Upon what does the value of lightning-rods depend?
9. Explain electric induction.
10. Describe Grove's battery.

CHEMISTRY.

1. Explain the action of oxygen in purifying water and promoting decay.
2. How may ozone be formed in nature, and how artificially?
3. What is a solution and what are acids, bases, and salts, as the chemist understands these terms?
4. What is the use of carbonic dioxide in the atmosphere, and how does the quantity vary?
5. How are friction matches made?
6. Describe Marsh's test for arsenic.
7. How is steel made by the Bessemer process?

8. How is calcium found in nature? Give the symbols for quicklime, slacked lime, gypsum, chalk, and calcic phosphate.
9. Tell how aluminum is found in nature and how porcelain is made.
10. What are the materials used in making glass?
11. Mention the properties and uses of graphite.
12. What is the popular meaning and the chemist's understanding of the term combustion?

#### ELEMENTS OF THE ENGLISH LANGUAGE.

1. What impulse did learning receive in the tenth century?
2. Name the Anglo-Saxon portions of the language, prefixes and suffixes, and give the principal forms of some Anglo-Saxon verb.
3. What was the result of the Norman invasion? How did the Conqueror show his patronage of learning? What checked French influence?
4. Name five authors belonging to the early Anglo-Norman period; mention their works, and state whether these were compositions or translations.
5. Name some of the peculiar grammatical forms of Chaucer's time, and say what you can about the final *e* in Chaucer's writings.
6. From what sources were words introduced into the language during the fourteenth and sixteenth centuries? Name certain groups of words introduced in the sixteenth century.
7. What forms of literature do we borrow from the Italians, and how do our poets show the influence of Italian literature?
8. Name one or more important events in the fourteenth, fifteenth, sixteenth, seventeenth, and eighteenth centuries each.
9. Describe the stages through which dramatic literature has been developed.
10. What changes in the language have taken place during the present century?

## POETRY.

1. Scan and describe the metre of the following :  
Oh, a wonderful stream is the river Time,  
As it runs through the realm of tears,  
With a faultless rhythm and a musical rhyme  
And a broader sweep and a surge sublime,  
As it blends in the ocean of years.
2. Explain the errors in rhyme in the following :  
Oh, the birds, the trees, the ruddy  
And white blossoms sleek with rain !  
Oh, my garden rich with pansies !  
Oh, my childhood's bright romances !  
All revive like Hector's body,  
And I see them stir again.
3. What is an epic? Mention four celebrated epics and their authors.
4. To whom are Tennyson's *Idyls* dedicated? What is their character compared with other poems so called?
5. In the *Dedication* explain the following allusions: "the gloom of imminent war," "all narrow jealousies,"  
"Far-sighted summoner of War and Waste  
To fruitful rivalries of peace."
6. *The Coming of Arthur*. To whom are we indebted for the tales of Arthur? When is Arthur supposed to have reigned? What was the Round Table?
7. What was Bedivere's account of Arthur's birth and history?
8. What is the significance of Laodogran's words: "I have seen the cuckoo chased by lesser fowl," etc.? Who were Gorlois and Anton?
9. *The Passing of Arthur*. "Far other is this battle," etc. When was the Roman wall built? Explain "The king who fights his people fights himself." Who is meant by "One lying in the

dust at Almesbury"? Explain "this blind haze — Hath folded in the passes of the world."

10. Explain "My house hath been my doom," "When all the purport of my throne hath failed." Give the legend concerning Excalibur.

#### LATIN.

##### CÆSAR—BOOK I.

1. Translate XXIII. to *Ea res per fugitivos*. Parse *prospiciendum* and *avertit*.

2. Translate XXVII. *Eo postquam Cæsar pervenit* to end. Give the construction of *Eo*, *millia*, *perterriti*, *quod* and *egressi*.

3. Translate XXXV. to *Si id ita*.

4. Parse *quoniam* and *quum*. Give the rules for the mood of *appellatus esset*, *referret* and *transduceret*.

5. Translate XL. to *Sibi quidem persuaderi*. Why is *judicaret* subjunctive? How many centurions in a legion?

##### CICERO IN CATILINAM I.

1. Translate II. to *habemus enim*.

2. Give principal parts and synopsis of *interfectus est* and *patimur*. What is the construction of *ne quid* and *patre*?

3. Translate V. *Quare quoniam id* to end.

4. What is the construction of *quoniam id* and *quod*. Parse *sponte*. Give the principal parts of *consulis*.

5. Translate VII. *Venisti paulo* to *Quid, quod adventu*. Why is *sis oppressus* subjunctive? When and where was this oration delivered, and what was Cicero's office?

## THIRD CLASS—SECOND YEAR.

## RHETORIC.

## I.

In what ways may a command of words be obtained? Which of these ways are you using?

## II.

What do you think of the use of slang? Give a reason for your opinion.

## III.

Of what use is the study of synonyms?

## IV.

Point out and correct the errors in the following sentences :

1. Mary cannot study without the room is quiet.
2. The Massachusetts election transpired some days ago.
3. The man who alone could have explained the mystery is now dead.
4. Printing is well done by either of these three companies.
5. Do not pass Johnny the cake again; he has had quite enough.

## V.

Defend or criticise the use of the words underlined in the following sentences :

1. Is it *liable* to rain to-day or to be pleasant?
2. Miss K. is trustworthy; her conduct is always *unexceptionable*.
3. Some old fashions in dress have been *resurrected*.
4. The object of this society shall be the *mutual* improvement of its members.
5. The statue of Niobe represents her in a posture of the deepest grief.

## VI.

1. What are the properties that belong to a good style?
2. What do you understand by each of these?

## VII.

Correct the faults in the following sentences :

1. She left her alone, telling her that she should come in in an hour, and see what she had written.
2. I thought to myself how little the stars seem.
3. Behind two stately elms is a little white cottage, around which is a border of flowers, which give it a cheerful appearance.

## VIII.

1. What are the figures founded on resemblance, and on contrast?
2. Give an example of each.

## IX.

Write examples original or selected, of metonymy, metaphor, personification of the highest kind, interrogation, and simile.

## X.

Point out the figures in the following passages :

“ On the tossing sea of steel

To and fro the standards reel.”

“ A man he was to all the country dear.”

“ the storm was heard but faintly

Knocking at the castle gates.”

“ Politeness is like an air-cushion ; there may be nothing in it, but it eases jolts wonderfully.”

“ O earth, so full of dreary noises !

O men, with wailing in your voices !

O delv'd gold the wailers heap !

O strife, O curse that o'er it fall !

God strikes a silence through you all,

And ‘ giveth His beloved sleep.’ ”



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**MODERN HISTORY.**

**I.**

What are the historical races of Europe? To what great family do they belong? Name the chief Teutonic tribes.

**II.**

What was the last Teutonic invasion of Italy? With whom did the invaders divide the government of Italy?

**III.**

Give an account of the intellectual condition of the Saracens during the Middle Ages.

**IV.**

Mention two of the most celebrated popes of the Middle Ages, and state the great aim of one of them.

**V.**

Who were the greatest navigators of the 15th century? Of what were they in search?

**VI.**

What were the chief events in the reign of Charles V.?

**VII.**

Who succeeded Charles V.? What were the Netherlands in the time of the successor of Charles? What are they now? Describe the inhabitants in the 16th century.

**VIII.**

Describe the character of Gustavus Adolphus. After his death who, in Sweden, directed the course of the war?

**IX.**

What was the cause of the assembling of the parliament of 1640? What was it called and why? Mention the chief acts of this parliament.

## X.

What was the influence of the literature of the French writers of the 18th century upon the reign of Louis XVI.? Mention three of the most prominent of these writers. Who was Turgot and what were his plans?

## PHYSICS.

## I.

Upon what property of matter do expansibility and compressibility depend? Why? Is it a universal or characteristic property of matter?

## II.

Give the law of weight. If a body on the surface of the earth weighs 900 pounds, what would it weigh 8,000 miles above the surface of the earth? What would it weigh at the earth's centre?

## III.

What is the difference in pressure upon the bottom of a quart measure filled with water and upon the bottom of a two-quart bowl filled with water, the bottom being of the same size and the water of the same depth as in the other vessel? What is the difference in the weight, if the vessels themselves weigh equally?

## IV.

Describe Torricelli's experiment. State what it proved. Who verified Torricelli's conclusions?

## V.

What is a siphon; for what is it used? Describe and explain its action.

## VI.

How are sound waves propagated? What is necessary for the propagation of sound? What is a wave period; a wave length? What is the velocity of sound?

## VII.

What is meant by the intensity of sound? How may intensity be increased? What is pitch? Upon what does the difference in pitch depend? What is quantity?

## VIII.

What is the difference in the manner of the vibration of sound waves and light waves? What becomes of the light that falls upon an opaque body?

## IX.

What is the effect of distance upon the intensity of light; of sound?

## X.

In what direction do objects appear to be? What is a virtual image? Is the image formed by a plane mirror, real or virtual? Where is it formed? Where are real images formed? What kind of mirrors always form virtual images?

## ENGLISH LITERATURE.

## I.

1. Name the author of the *Canterbury Tales* and give its plan.
2. From what was its name derived?
3. What suggested its plan?

## II.

Give the story of one of the best tales.

## III.

1. What difficulties stand in the way of familiarity with Chaucer?
2. Write a quotation from the *Canterbury Tales*.

## IV.

What may be said of the language of the *Fairie Queene*?

## V.

1. How many plays did Shakspeare write?
2. Were they all original?

## VI.

1. To what class does the Merchant of Venice belong?
2. Give briefly the story of the play.

## VII.

1. When was this play written?
2. From what is its name derived?
3. Whom do you regard as the principal character? Why?

## VIII.

1. Explain the use of the words *sooth*, *argosies*, *gear*, *usance* and *fond*.
2. How were Jews regarded at this time?
3. How is this manifest in the play?

## IX.

1. How and by whom was Antonio saved?
2. What traits of character does Shylock manifest? Support your answer by reference to the play.

## X.

Name some of the finest passages, and quote at least one.

## XI.

1. Of what subjects do *L'Allegro* and *Il Penseroso* treat?
2. Where and when were they written?
3. What effect of time and place may be seen in the poems?

## XII.

What occupations are represented in *Il Penseroso* as those of the melancholy man?

## XIII.

What, in *L'Allegro*, as those of the mirthful man?

## XIV.

Who are meant by *Philomel*, *Cynthia*, *Pluto*, *Sylvan*, and  
"that starred Ethiop Queen that strove  
To set the beauty's praise above  
The sea-nymphs"?

## XV.

1. Did Milton at this time approve of the drama?
2. Quote from his works in support of your opinion.

## XVI.

1. What is the subject of *Lycidas*?
2. Where did Milton get this name?

## XVII.

Explain the allusion in the lines:—

“What could the Muse herself that Orpheus bore,  
 The Muse herself for her enchanting son,  
 Whom universal nature did lament,  
 When, by the rout that made the hideous roar,  
 His gory visage down the stream was sent,  
 Down the swift Hebrus to the Lesbian shore?”

## XVIII.

What were Pope's chief works, and in what period of his life was each written?

## XIX.

1. To whom is the “*Essay on Man*” dedicated?
2. What was the character of this friend?

## XX.

1. In *Epistle I.*, what does Pope aim to prove?
2. What are the main arguments?

## LATIN.

## CÆSAR—BOOK I.

Translate into English:

Divitiacus multis cum lacrimis Cæsarem complexus obsecrare coepit, ne quid gravius in fratrem statueret: Scire se illa esse vera, nec quemquam ex eo plus quam se doloris capere, propterea quod, quum ipse gratia plurimum domi atque in reliquâ Galliâ, ille minimum propter adolescentiam posset, per se crevisset; quibus opibus ac nervis non solum ad minuendam gratiam, sed paene ad

perniciem suam uteretur; sese tamen et amore fraterno et existimatione vulgi commoveri.

Eodem die ab exploratoribus certior factus hostes sub monte condisse millia passuum ab ipsius castris octo, qualis esset natura montis et qualis in circuitu ascensus, qui cognoscerent, misit. Renuntiatum est, facilem esse. De tertia vigiliâ Titum Labienum, legatum pro praetore, cum duabus legionibus et iis ducibus, qui iter cognoverant, summum jugum montis ascendere jubet; quid sui consilii sit, ostendit.

Give the principal parts of *complexus*.

Give the participles from *complexus*.

Compare *multus*.

What is the construction of *quid*?

Compare *gravius*, and what does it limit?

Give the reason for the mode in *statueret*.

Give the principal parts of *statueret*.

Give the synopsis of *statueret* in the mode, voice, person and number in which it is found.

Give the reason for the tense in *statueret*.

What is the subject and object of *scire*?

Give the construction of *quemquam*.

Give the construction of *quam*.

Give the construction of *se*.

Give the construction of *doloris*.

What does *propterea quod* connect?

What does *quum* connect?

Give the reason for the mode in *posset*.

Give the synopsis of *posset* in the mode, person and number in which it is found.

To whom do *se*, *ipse*, *ille*, and *se* refer for antecedents?

Give the principal parts of *crevisset*.

Give the construction of *opibus*.

What part of speech is *minuendam*?

What is the construction of *minuendam*?

Give the principal parts of *uteretur*.

Give the reason for the mode in *uteretur*.

Give the accus. sing. and nom. plural of *vulgi*.

What is the gender, number and case of *certior*, and what does it limit?

Give the principal parts of *consedisse*.

Give the construction of *passuum*.

What is the construction of *millia*?

Give the singular of *millia*, and the genitive and dative plural.

What part of speech is *qualis*, and what does it limit?

Give the reason for the mode in *esset*.

What part of speech is *qui*?

What is the construction of *qui*?

What is the reason for the mode in *cognoscerent*?

What is the subject and object of *jubet*?

Give the principal parts of *cognoverant*.

Give the synopsis of *cognoverant* in the mode, voice, person and number in which it is found.

Give the construction of *ducibus*.

Give the subject and object of *ostendit*.

What time is "de tertia vigilia"?

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#### FOURTH CLASS—FIRST YEAR.

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##### PHYSIOLOGY.

1. State five facts about the bones. How is physical exercise beneficial to them?
2. Name five important organs of digestion, and name three causes of indigestion.

3. State two important facts about the heart, and describe its action.
4. Trace the course of the blood around the body from a small artery in the face back again.
5. How is physical exercise beneficial to the muscles?
6. Describe the cilia, aorta, pulmonary veins, thoracic duct and epiglottis.
7. If the lungs are diseased, how are the other organs affected?
8. How does the true skin differ from the cuticle?
9. Why do we need a variety of food?
10. What is the consequence of sitting in a draught when very warm?

## ALGEBRA.

1. There is a pole standing one-half and one-third of its length under water, and 4 feet above. Required the length of the pole.
2. A father is 3 times as old as his son, but five years ago he was 4 times as old; what are their ages now?
3. Two pieces of cloth were purchased at the same price per yard; but as they were of different lengths, the one cost \$5.00, and the other \$6.50. If each of them had been 10 yards longer, their lengths would have been to each other as 5 to 6. Required the length of each piece.
4. What is the value of  $\frac{a\sqrt{b} + 2\sqrt{mb}}{m\sqrt{b} - (1-m)a}$ , when  $a = 4$ ,  $b = 5$ , and  $m = 20$ ?
5. If A give B \$5 of his money, B will have twice as much money as A will have left, and if B give A \$5, A will have three times as much as B will have left. How much has each?
6. (1) From  $\sqrt{8a^2c + 6abc + 3b^2c}$  take  $\sqrt{12b^2c}$ .  
 (2) Add  $5\sqrt{\frac{2}{3}}$  and  $2\sqrt{24}$ .  
 (3) Multiply  $a + \sqrt{b}$  by  $a - \sqrt{b}$ .



(4) Multiply  $3\sqrt{3}$  by  $\sqrt{2}$ .

(5) Divide  $\frac{1}{2}\sqrt{5}$  by  $\frac{1}{3}\sqrt{2}$ .

7. A boy arranged to carry 100 glass vessels to a certain place and to receive 3 cents for every one he delivered, and to forfeit 9 cents for every one he broke. On settlement he received 240 cents. How many vessels did he break?

8. Given  $\begin{cases} x^2 - y^2 = 24 \\ x + y = 6 \end{cases}$  to find the values of  $x$  and  $y$ .

9. The sum of two numbers is  $s$ , and their difference is  $d$ . Required the numbers.

10. It is required to divide the number 18 into two such parts that the squares of these parts may be to each other as 25 to 16.

#### ANCIENT HISTORY.

1. Name the Ancient Oriental Monarchies. How have we obtained information respecting Egypt?

2. For what were the Phœnicians distinguished? Who were Herodotus, Nebuchadnezzar, Solomon, Darius, Belshazzar?

3. Name the most important events in Grecian history, and tell what changes they produced.

4. Name the leading characteristics of the Athenians and Spartans.

5. Who was Pericles? Give a brief sketch of his period.

6. What persons do you associate with the following events:—Battle of Marathon, Battle of Thermopylæ, Battle of Leuctra, Battle of Platea, Peloponnesian War?

7. What were the wars between Rome and Carthage called, and why?

Name the territory added to the Roman dominion by each of these wars.

8. Name five persons prominent in the civil strife, and tell how they became so.

9. Give a brief account of Julius Cæsar.

10. How long did the Republic last? When was the Empire established? State two facts in regard to the Age of Augustus. Give an account of Constantine.

#### BOTANY.

1. Name and describe the parts of a *perfect* flower.
2. Define the terms *sessile*, *bract*, *involucre*, *peduncle*, and *monadelphous*.
3. Name the part or parts of the plant eaten in strawberries, blackberries, turnips, potatoes, onions, string beans, green peas, tomatoes, apples, and peaches.
4. Name the various parts of plants in which a stock of nourishment for the next year's growth is stored, with examples.
5. Give the difference between a *raceme* and a *spike*; between a *spike* and a *head*; a *head* and a *glomerule*.
6. Name two of the principal characteristics of the Rose Family; of the Pulse Family.
7. Name the parts of an exogenous stem, beginning at the centre, and tell how the age of an exogenous tree may be known.
8. Which leaf would be likely to be long and narrow, one *pinnately* or one *palmately* varied? Where would you expect to find the greater number of leaflets, on a *pinnately* or *palmately* compound leaf?
- 9, 10. Analyze the specimen given you, following the key.

#### LATIN.

1.

Translate into Latin :

The soldiers were brave that they might be praised by Cæsar.

The leaders of the enemy were conquered in many battles.

Cicero was called the father of his country.

I do not know how large a force Cæsar had at that time.

## 2.

They say that the Gauls were surpassed in valor by the Romans.

Cæsar commander of the Romans conquered the enemy.

Rome was for many years a very powerful city.

They say that Rome was a powerful city.

## 3.

Translate into English :

Hic rex interfectus est scelere filiæ Tulliæ et Tarquinii Superbi, filii ejus regis, cui Servius successerat. Nam ab ipso Tarquinio interfectus est. Tullia in forum properavit, et prima conjugem regem salutavit. Quum domum rediret, aurigam super patris corpus, in viâ jacens, carpentum agere jussit.

## 4.

Undevicesimo anno post exactos reges, Caius Marcius, Coriolanus dictus ab urbe Volscorum Coriolis, quam bello ceperat, plebi invisus fieri coepit. Quare urbe expulsus ad Volscos, acerrimos Romanorum hostes, contendit, et ab iis dux exercitus factus Romanos saepe vicit.

Give the principal parts of *interfectus est* in the active voice.

Give the principal parts of *interfectus est* in the passive voice.

Give the construction of *scelere*.

Give the dat. sing. and plural of *filiæ*.

Give vocative singular and accusative plural of *filiæ*.

Give the construction of *cui*.

Give the principal parts of *successerat*.

Give the synopsis of *successerat*.

Give the construction of *Tarquinio*.

Compare *prima* and what does it limit?

What does *quum* connect?

Give the construction of *domum*.

Give genitive singular and accusative of *domum*.

Give the principal parts of *rediret*.

Give the synopsis of *rediret*.

- 
- Give the reason for the mode in *rediret*.  
What is the reason for the tense in *rediret*?  
What is the construction of *aurigam*?  
What are the principal parts of *agere*?  
What are the principal parts of *jussit*?  
Give the synopsis of *jussit*.  
Give the principal parts of *jacens*.  
What are the participles from *jacens*?  
What is the gender, number and case of *jacens*, and what does it limit?  
Give the subject and object of *jussit*.  
Give the participles from *exactos*.  
Give the construction of *Coriolanus*.  
Give the construction of *plebi*.  
What do *exactos*, *dictus* and *invisus* limit, and what is the antecedent of *quam*?  
Compare *acerrimos* and what does it limit?  
Give the construction of *hostes*.  
What does *et* connect?  
Compare *saepe*.

# QUESTIONS

SUBMITTED TO THE

GRAMMAR SCHOOL SCHOLARS FOR ADMISSION

TO THE

HIGH SCHOOL, JUNE, 1880.

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## GRAMMAR. 1880.

1. Write sentences containing the plurals of *alumnus*, *series*, *man-servant*, *berry*, *money*, *volcano*, *thief*, *radius*, *summons*, *superficies*, *criterion*.

2. Give the rule for the formation of the possessive case of nouns.

3. Write sentences containing the possessive singular of *child*, *ox*, *eagle*, *conscience*, *son-in-law*, *Moses*, *Adams*, *sheep*, *mouse*, *niece*.

4. Give principal parts of *come*, *fly*, *flee*, *plead*, *drink*, *bed*, *shine*, *lay*, *shoe*, *flow*.

5. Conjugate in the present and the past tense, indicative mode, *lie* (to recline), *lay*, *sit*, *set*.

6. Correct: James was sick and laid down on his bed. He ought to have laid down before. He set up a long time afterward. Where is the hen setting? Who did he inquire for? Our friends intended to have met us. There has never been any unkind feelings between you and I.

7. Parse the underscored words: *Allow* me to introduce to

you my friend. *Go ye* and preach the gospel to every creature. John is more studious than *James*, but not so studious as *Thomas*.

8. "O Solitude! where are the charms  
*That sages have seen in thy face?*  
 Better *dwell* in the midst of alarms  
 Than *reign* in this horrible place."

"'Twas thus by the cave of the mountain *afar*,  
 Where his harp rang *symphonious*, the hermit began;  
 No more with himself or his nature at war,  
 He thought *as a sage*, though he felt *as a man*."

9. Punctuate: He was a brave wise generous and pious man  
 To conclude he was greatly disappointed Unfortunately for us  
 the tide was already ebbing In the first place he is unscrupulous.

10. Write a letter of not less than ten lines.

#### ARITHMETIC. 1880.

1. During a storm  $2\frac{1}{4}$  inches of rain fell, how many hds. fell upon one-half acre?

2.  $7\frac{3}{4}$  of  $\frac{.06}{3\frac{1}{2}}$  is  $\frac{7\frac{1}{2}}{11\frac{1}{8}}$  of what number?

3. (a.) If  $\frac{3}{8}$  of what is received is gain, what is the gain %?

(b.) If the receipts are  $\frac{3}{8}$  of the cost, What is the loss %?

(c.) The time past noon is  $\frac{4}{5}$  of the time to midnight; what time is it?

4.  $\sqrt[3]{14348907} = ?$

5. If one cubic foot of coal weighs  $90\frac{3}{4}$  pounds, how many tons will a bin that measures 10 ft. 6 in. by 6 ft. 4 in. by 5 ft. 6 in. hold?

6. Find the cost of a carpet  $\frac{3}{4}$  yd. wide at \$1.75 a yard that will exactly cover the floor of a room 18 ft. 6 in. by 15 ft. 4 in.

7. A sells at  $8\frac{1}{4}$  cents and gained 10 %. If he had sold at 10 cents, what would have been his gain %?

8. Find the cost of plastering the walls and ceiling of a room

18 ft. 6 in. long, 15 ft. wide, 10 ft. high, at 20 cents per square yard. Deduct 136 square feet for windows and doors.

9. A merchant sent a check for \$12,000 to his agent to buy cotton at 15 cents a pound after deducting his commission of  $2\frac{1}{2}\%$ . How many pounds of cotton would he buy?

10. The sum of the diagonal and longest side of a rectangle is 64 feet; the shorter side is 16 feet in length. Find the length of the diagonal.

#### HISTORY. 1880.

1. Give an account of the introduction of Negro Slavery.
2. Give an account of the settlement of Salem and the founding of the Massachusetts Bay Colony.
3. Give an account of King Philip's War.
4. Name the Intercolonial Wars, their causes and results.
5. Name the causes of the Revolution.
6. Give an account of Burgoyne's Campaign.
7. Give an account of the adoption of the Federal Constitution, and the causes leading to it.
8. Give an account of three departments defined in the Constitution.
9. Give an account of the origin and of the passage of bills, and of the veto power.
10. Give an account of the investment of Petersburg and Richmond.

#### GEOGRAPHY. 1880.

1. Locate Rio Janeiro, Calcutta, Cairo, Algiers, Smyrna.
2. Name physical features of South America, its mountain systems, rivers, lakes, etc.
3. Name the productions of France. Locate five of its principal cities.
4. Describe a journey by water from Providence to St. Petersburg.

5. What is latitude? What is longitude? Give the latitude of Providence, Washington, Paris, Chicago, Rome, Constantinople.
6. Through what waters would a vessel pass in going from Boston to Calcutta?
7. Through what waters would a vessel pass in going from New Orleans to Cronstadt?
8. Draw a map of Africa. Name the productions of North Africa.
9. Draw a map of New York. Locate five principal cities.
10. Draw a map of the British Isles and locate five towns.

## SPELLING. 1880.

Winning, answered, solid, volleyed, isosceles, ineligible, deleble, circuit, surfeit, euthanasy, heliotrope, gelid, schedule, macerate, moneys, companies, journeys, admitting, metonymy, tocsin, architect, archetype, lacerate, lassitude, osseous, ossicle, cayenne, calipers, carnelian, eccentric, exequies, escutcheon, aspirate, generate, separate, molecule, moidore, litany, villainy, sieve, oculist, occult, pommel, trafficking, billiards, bilious, relevant, relegate, rinse, wince.



1881.]

CITY DOCUMENT.

[No. 15.]

ANNUAL REPORT  
OF THE  
SCHOOL COMMITTEE  
OF THE  
CITY OF PROVIDENCE.

[JUNE 17, 1881.]



PROVIDENCE:  
PROVIDENCE PRESS COMPANY, CITY PRINTERS.  
1881.

CTE

**IN CITY COUNCIL, June 17, 1881.**

**UPON THE ANNUAL REPORT OF THE SCHOOL COMMITTEE, for the year  
ending June 30, 1881 :**

**READ, whereupon it is ordered that the same be received and printed.**

**Witness,**

**HENRY V. A. JOSLIN, City Clerk.**

# REPORT.

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TO THE HONORABLE THE CITY COUNCIL OF THE CITY OF  
PROVIDENCE:

GENTLEMEN:—The School Committee present this  
their Annual Report for the year ending July 1st,  
1881.

But few new features are to be noted in the school-work of the past as compared with that of the two or three preceding years. The condition of the schools, under a judicious superintendence, with fairly efficient, and in many cases excellent, teachers may be reported as good.

Two new Primary schools have been opened, without decreasing the average number of Primary pupils to a teacher, and three rooms in different Grammar schools have been closed,—which has slightly increased the proportion of pupils to teachers in that grade.

There are, at this date, four hundred and forty-four (444) pupils in the High school. These are pursuing, under favorable conditions, the studies more especially

calculated to prepare them for teachers or for the University.

In the other schools the studies remain limited to those few and fundamental branches whose utility is unquestioned and whose mastery is considered practicable.

Pupils completing the Grammar school course have, as a rule, a good degree of knowledge of practical arithmetic, of United States history, of spelling and geography, with some skill in the use of language. They are able to read music and to write neatly. During the past winter a course of lessons in mechanical drawing was given to the teachers, by means of which they have been able to instruct their pupils in the same, with satisfactory results. It is sincerely hoped that this branch of instruction will be still further encouraged.

The criticism sometimes heard that our public school pupils do not read aloud with taste or intelligence, appears somewhat unjust. Great attention is given by most teachers to careful articulation and proper inflection. The growing sentiment that learning to read should be less an attempt to reach a given standard of elocution than to develop the power of receiving ideas from the printed page and—through familiarity with many and varied selections—to create a love for literature, is gradually affecting the method of teaching. The use of supplementary reading matter would encourage this sentiment.

Some progress in other directions is to be found, and the elevation of character and advancement of prospects due to the education diffused in this community by its free schools is not likely to be overestimated.

The time has, however, gone by for indefinite congratulation upon the results of popular education.

The attitude of public opinion is rather critical than otherwise, and your Committee recognize that their report is less expected to answer the question "Have we done well?" than the question "Have we done the best?"

The responsibility conferred by authority finds its natural limit in opportunity. In a city like our own the opportunity for attaining satisfactory results in education is exceptionally good. Our citizens are intelligent and prosperous, and thus fitted to desire and to afford the best. The city itself is large enough to command all essential resources, yet not so large as to require centralized management for its schools. It has therefore the advantage of an actually representative School Committee, who bring to the conduct of the schools that variety in counsel which is the safeguard of open questions, and that disinterestedness seldom found in organizations whose authority is final or whose services are remunerated.

The opportunity being thus favorable the responsibility is proportionately great. This is the standpoint from which the details of the work of education should

be examined and suggestions of further progress sought.

The intention of education is to help the individual to adjust himself in the best possible manner to the requirements of life. The first duty of education is toward such of life's requirements as are inexorable and unvarying. Neither intellectual nor manual accomplishments are the sole or chief objects of education. The importance of health and of character precedes that of acquirement, as the importance of the foundation precedes that of the structure.

To the preservation of health in a school-room, three conditions are essential. These are pure air, a proper distribution of light and, for the younger children at least, frequent opportunities for mental and physical relaxation. The importance of these conditions is primary. The difficulty of fulfilling them has perhaps been exaggerated. They form one of those cases which may be as effectually controlled by existing authorities as by the creation of a new or special department.

Those teachers who open their school-room windows wide at intervals, that is at recess or while the children are in motion, and thus completely change the air of the apartment, secure the first requisite for maintaining good health. If their example were universally followed, the problem of sufficient ventilation would be solved by what is probably the only reliable method now known for attaining it.

Prolonged order and quiet in a school-room are prejudicial to young children. The more active need an outlet for their nervous energy, the less active need the stimulant of exercise. Calisthenics well repay the slight trouble their introduction occasions, and the use of pictures and blocks in the Primary school-rooms redeems the time which without such aids goes to waste in listlessness or mischief.

The distribution of light is nearly as important as that of pure air. In some school-rooms the platforms face the uncurtained windows. Curtains which are readily adjustable are necessary at all school-room windows to prevent impairment of the eyesight of the occupants of the room.

To crowd a school-room, and especially one of the lower grades, is detrimental. Neither children nor teachers should be subjected to the nervous irritation consequent upon shutting up so many as forty or fifty young children for six hours of the day with a single teacher. When the rooms of any school become thus crowded a temporary resort to the half-time system would afford partial relief.

While adequate education looks to the preservation of health, its work in respect to character becomes actively formative. Children are to be, and will be, molded by education. So susceptible are they to impressions that every influence of the school-room becomes a process in determining the type of certain

human beings. It follows that the influences proper to exert are those which correspond with the qualities that society most esteems; such as truthfulness, unselfishness, courage, modesty, reverence. These and the reverse traits are constantly operating in children's lives and are by means of education to be repressed, encouraged or controlled. Far more than the memory these traits demand training. Far less than any other science can morals be taught as a theory. The habits of selecting and renouncing, of perceiving the good and choosing it, of perceiving the bad and letting it alone, are acquired by repeated impressions, by directed experiences and by continual example. The customs of a Primary school should allow for manifestations of temperament, and by thus furnishing an opportunity for molding character, supplement the work which, though pertaining of right to the home, must not be ignored in the educational plan of the State.

Those things which should be taught furnish a legitimate ground for diversity of opinion. Intellectual acquirements alone do not constitute education. Neither do industrial acquirements alone constitute education. That educates, as has been well said, which calls out varied efforts of intelligence and will. To this result accurate, thorough and self-reliant work is indispensable, and success is assured in proportion as the hand, the eye and the brain are trained to intelligent co-operation. The means selected for this training must



depend somewhat upon the conditions found in a community. Here, in Providence, we have at present an over-supply of brain-workers; girls seeking to teach, boys seeking to be clerks, accountants and the like; with a deficiency in skilled manual and technical labor. Our free school system is, logically, the agent through which the balance between supply and demand may be adjusted.

There is likewise to be considered the increasing class of non-attendants at school. Somewhat more than one-fifth of the children of Providence between the ages of five and fifteen years did not attend school during the past year. To fit this class for remunerative employments would be the final justification for their compulsory education. It is common to speak of our public school system sometimes, apparently, without reflection that that only is treated as a system in which all parts are considered in relation to each other and to the whole. In a system of education the importance of the teacher is supreme. With the teacher rather than upon buildings or text-books or any sort of apparatus, rests the success or failure of the school. The health, the character, the acquirements of the pupils are finally at the option of the teacher, who should possess a loving heart, a self-controlled and controlling will, a just and well-stored mind; those qualities, in short, which entitle the individual to a choice of vocations.

A well-known feature of the German universities is the provision for the continued education of the professors as well as that of the students. We have yet to accept and act upon the idea that the teacher, as the source of education, should be fostered, that zeal should be stimulated, and efforts toward self-improvement encouraged, that pay, as in other professions, should be measured by the value of service, that actual success in teaching should be the test of fitness and that peculiar aptitude should be sure of recognition and reward.

It is false economy to provide cheap tools for the work by which whatever of improvement accrues to the race is transmitted by one generation to another.

Respectfully submitted,

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| FANNY PALMER,<br>SPARROW H. NICKERSON,<br>J. G. PARKHURST, | } <i>Committee.</i> |
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## EXTRACTS

FROM THE

## QUARTERLY REPORTS OF THE SUPERINTENDENT.

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PROVIDENCE, Nov. 19, 1880.

*To the School Committee of the City of Providence:*

GENTLEMEN:—The present is preëminently an age of progress. In no epoch of the past have the boundaries of knowledge been so enlarged or the researches of science been so profound and successful as during the last fifty years. In every department the progress has been unprecedented, far surpassing the boldest anticipations of the most renowned scientist. Had any one predicted fifty years ago the wonderful results that have been obtained by the application of steam, or by the invention of the telegraph, the telephone, the phonograph and the microphone, they would have been deemed wild enthusiasts or fanciful dreamers.

But the ardent searchers after truth have been so elated and encouraged with what they have already discovered that, not content to confine their inquiries to that which is unknown and within the reach of the human faculties, they have advanced far into the cloud-land of speculation, disregarding the obvious truth that there are sublime mysteries in nature that lie far beyond the reach of the highest cultured intellect. These bold and self-confident speculators, ignoring the fact that all true science must have for its basis mental and physical truths, attested by consciousness and verified by experience, they have been floundering in the bogs of metaphysics, weaving webs of the most subtle sophistry, pursuing gorgeous phantoms that their own prolific brains have created, which have no other support but bold assertion and baseless assumption. These theories, based on a kind of metaphysical algebra with unknown quantities that cannot be defined, have often been advocated and adorned by such a wealth of learning as to captivate and mislead the scientific student.

One of the most eminent of these bold theorists, after spending years in elaborating and explicating his system in eighteen huge folio volumes, complained, at the close of life, that there was only one man living who understood his system, and he didn't.

A reaction is already manifest among the earnest seekers after truth, and they are beginning seriously to inquire what is truth, and what are its criteria, and

what is the basis of true science, and what are the limits of the human faculties? A similar spirit of speculating and theorizing is rife in the lower departments of education.

Not content in correcting what is defective and faulty in the old system of instruction, and substituting wiser and improved methods, that have been carefully tested by experiment, there are those who would discard everything that is old, without regard to any intrinsic excellence it may contain. As railroads and steam cars have taken the place of turnpikes and slow coaches, they confidently imagine that the time has come when similar changes can and ought to be made in all our educational processes. They seem to think that the Divine injunction, "To prove all things, and to hold fast that which is good," to have lost much of its original wisdom, and is ill-adapted to the progressive spirit of the age.

That there have been many and important improvements in modes and methods of imparting instruction in the last fifty years cannot be questioned, and that there is need of still greater improvement, all must admit. As the philosophy of the youthful mind in its earliest developments becomes better understood, wiser and more rational methods of culture will undoubtedly be adopted.

In our journals of education and in our school reports, many of which are able and instructive, almost

every topic relating to education has been considered and valuable truths have been elucidated. Also in the frequent gatherings of teachers to compare the results of experience and to discuss great practical problems, valuable information is sometimes gained to aid and facilitate continued progress. But whilst these sources of information abound, there is needed a wise discrimination to distinguish what is true, rational and practical, from what is crude and visionary, and has no other reason for its adoption but the bold assertion of some vain theorist who has seldom visited a school-room.

Our young and inexperienced teachers, who resort to these fountains of knowledge in the confident expectation of obtaining superior wisdom, are often misled by the novelties and crudities that are advocated with such a parade of learning; and through their inability to judge wisely, may be aptly compared to the adventurers in Solomon's fleet that went to Tarshish—while some brought back gold and silver, others brought home nothing but apes and peacocks.

We would not ignore or under-value in the slightest degree any assistance that teachers can receive to aid them in their important work, but would enjoin upon every one who has a just sense of his responsibility, and who is ambitious to excel, to avail himself of all the means of a broader and more liberal culture that he can command; but teachers should understand that radical changes and novel theories, not tested by experience, do not

necessarily indicate real progress. And whilst he should not follow too implicitly the example and advice of old teachers who are so wedded to their old ways as to reject everything that is new, they should also receive with extreme caution the unsupported views of mere scientists who are ambitious of notoriety.

After all the discussion of systems, modes and methods of teaching, and the adoption of the wisest and most philosophical methods, we should not ignore the fact that it is the teacher that gives character to a school; that the efficient power lies mainly in the teacher. When skill and experience are wanting, nothing can supply their place.

We shall never be able to elevate our schools to what they ought to be, and obtain the greatest practical results, until our intermediate and primary schools are so organized, and some of our school buildings so constructed, that our candidates shall have an opportunity to serve an apprenticeship in the room with our most skillful and experienced teachers, and there learn to teach and govern by their advice and by their example.

The science of teaching may be taught theoretically, but the art, which is far more important, can be acquired only in the school-room.

There is no trade or profession in which valuable materials or interests of great moment are intrusted to any one without experience. Why then should the

minds of our youth receive less care and thoughtful consideration? Why should they be subjected to the repeated experiments of the inexperienced and unskilled?

The highest and most responsible duty of a teacher is not to quicken and develop the perceptive powers and to train the intellect. But that which transcends all other considerations is the formation and upbuilding of a pure and virtuous character. This is the noblest work in which men or angels ever engaged. The office of a true teacher is peculiarly fitted for this work. The impressions made on the youthful mind are generally permanent, and have a controlling influence through life. That the future career of the young is determined by his early training, has not only a divine sanction, but is confirmed by universal observation.

The present mode of examining candidates for teachers to ascertain their qualifications and fitness for their work is often a mere farce. It is very rare that there is an applicant for a school who has not been through our best schools, or others of a similar grade, and been repeatedly examined in all the branches taught. A very large percentage of correct answers, in a written examination, to questions in arithmetic, grammar and geography afford but a slight evidence of ability to teach and govern a school successfully. To judge wisely we must see the work that is done in the school-room. There is no other test that can be depended on.



Until some of our buildings are so constructed and our schools so organized that we can avail ourselves of this, the only true method of examination, we shall be constantly liable to mistakes, and our schools must suffer in consequence. It is much easier and far less embarrassing to appoint new teachers, than to displace one who has been only partially successful.

There is another subject connected with the appointment of teachers, that ought to receive the thoughtful consideration of the Committee. When teachers have served the city faithfully many years, and have, during this period, received only a bare competence for their support, and through the infirmities of age or sickness are unable to render as acceptable service as when in the prime and vigor of life, ought they not to be entitled to favorable consideration? Unless something can be done by the city, an association of teachers for mutual relief should be early formed, that the declining years of faithful servants may be made comfortable and happy, and that they may not feel compelled, by their necessities, to remain in school when it would be wiser for them to retire.

There are a few prominent faults in our schools that have been frequently pointed out, and should be repeated until they are corrected. That there is at the present time a tendency to crowd our schools with a variety of studies, and to require too much of our pupils in a given time, is obvious to every careful

observer. The simple elements of knowledge are passed over too rapidly and are not thoroughly reviewed and incorporated with previous acquisition. The useful, the substantial and the practical are too often neglected for what is showy and superficial. Too much time is spent in learning technical terms and definitions that convey no exact and definite meaning to the youthful mind.

Young pupils should enter the paths of knowledge through the narrow and beautiful gate designed by Nature, and not transported to the broad fields of science to grapple with great truths that thoughtful and mature minds have discovered. But whilst the first steps should be short and easy, and every needed assistance should be rendered to quicken the unfolding intellect, the young pupil must learn to put forth gradually his own strength, and not to rely too much upon the assistance of others. Whatever pupils can be encouraged to do for themselves should never be done for them.

In the management of our schools a good discipline is a prime necessity. A school that is not well governed cannot be well taught. A teacher may have every other qualification of the highest order, but if he cannot discipline his school wisely and well, he will make a signal failure. An ability to govern well can be acquired only in part; it must be a natural endowment, improved by self-culture. Corporal punishment

is inflicted much less frequently than in past years, but it can and ought to be diminished still more in a number of our schools. We find the least of it in the best schools. It should never be resorted to except in extreme and obstinate cases, and even then not until all other means of correction have failed, and never with severity. An indiscriminate use of the rattan always implies a lack of moral power in the teacher. There are others who, to enforce obedience, adopt measures even more objectionable than that of the rod. They are in the constant habit of fault-finding, noticing every trivial act of the violation of some petty and unnecessary rule with the severest reprimand and reproof. Such seem to have no patience or sympathy with dullness or perversity of temper in their pupils, but discourage them by holding them up to ridicule, and by giving them offensive and opprobrious epithets, and by making invidious comparisons, and when a pupil has failed in his lesson, or has not succeeded as well as others, to call him stupid, or a fool, or a ninny. The spirit of many a sensitive youth has been crushed by such thoughtless cruelty. This very serious fault in a few teachers has been often and emphatically condemned, and I regret to say there are yet a few who sometimes so far lose their self-control as to resort to it.

There have been no marked changes in the character or condition of our schools the past term. A larger number than usual, who have found lucrative employment, have left our High and Grammar schools; and three

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has been a corresponding increase in the number of pupils in our Primary schools.

Two new houses will very soon be ready for occupancy, one in the Ninth and one in the Tenth Ward. There is also a reasonable prospect that the Third District, which has suffered long and patiently, will at an early day be provided with the much-needed accommodation.

It is, perhaps, unnecessary for me again to refer to the fact that we have as yet no truant law or city ordinance of any kind to check the constantly-increasing number of truants and absentees from school. Why there is such general and continued indifference to the existence of an evil of such magnitude, and why no judicious efforts are made to remedy it, is one of the moral problems that it is not easy to solve.

There have been no important changes in the character or condition of our schools the past term that requires any special attention of the Committee. The severity of the weather and sickness, in some localities, have largely increased the percentage of absence. The results of the recent examinations of the different grades and classes, afford gratifying evidence that the teachers, very generally, have been faithful and earnest in their arduous work. The crowded condition of a few of our schools has imposed additional labors upon the teachers and has somewhat impaired the efficiency of their labors.

The school-house on Amherst street is finished and has been occupied the present term. There have been admitted into this school 237 pupils, with an average of nearly sixty pupils to a teacher. Would it not have been better to have erected in this locality a building of more ample dimensions?

The new building on Peace street is nearly completed and will be ready for occupancy the beginning of next term.

It is my duty to state, as I have done repeatedly, leaving the responsibility where it belongs, that the number of truants and absentees is largely increasing and is very seriously affecting the welfare of our schools. Why there is such apathy and indifference in regard to a subject of such vital importance is a question that it is very difficult to solve. From the statistics in the office of the City Registrar and from other sources we cannot reasonably expect, in the future, anything better than an abundant harvest of crime.

The two important questions that are now being discussed by earnest educators are, "What are the best methods of acquiring knowledge, and what should the great mass of children attending our public schools be taught?" The boundaries of knowledge have been so enlarged that it is often a very difficult problem for parents and teachers to decide what studies should have special prominence in our schools. When we consider that the time spent in school by a very large

majority of pupils is less than six years to a pupil, it becomes a question of vital importance how this time can be best improved. All must admit that those branches should be taught that will best fit each pupil, in the shortest time, for the active and responsible duties in that sphere and vocation in which he expects to be engaged. The variety and amount of knowledge is of far less importance than the exact and true method of acquisition.

One of the most important subjects that was brought before the teachers at the late meeting of the Rhode Island Institute of Instruction, was the hygienic condition of our schools. The subject was discussed in a very able and instructive lecture, and its importance was urged by an array of facts that ought to make a deep impression both on parents and teachers. It is neither wise nor humane to talk of economy when the health of our children in school is in danger of being impaired. Vigilant attention should be given to this subject both by parents and teachers. The best methods, however, of ventilating, lighting and heating our school-rooms will be of but little avail, unless teachers understand the correct principles of each, and know how to apply them. It is especially important that pupils should never, under any circumstances, be allowed to sit in a draft of cold air from the open windows, or to remain in their seats with wet clothes or wet feet. And whenever it may be necessary to open

the windows to change the air the pupils should be exercised in some light gymnastics which they have been previously taught. This has been repeatedly and emphatically urged upon teachers, and it should never be omitted.

In previous reports a great variety of topics intimately relating to the internal condition and working of our schools, have been briefly discussed. There are others of equal, if not of greater, importance that ought not to be ignored or passed over without due consideration.

Our public schools will, and must necessarily, reflect and embody the true sentiments of the people in regard to the paramount value of education. Where there is apathy or indifference toward our free schools, they cannot be brought to a high degree of excellence. The motive power lies wholly in the people. We might as well expect that the machinery that now turns out our beautiful fabrics would move without steam or water power, as that we can maintain schools of high character in a community where they are regarded as of secondary importance or with comparative indifference.

That a sound, practical education and a general intelligence in all classes, is fundamental and absolutely necessary to the maintenance of a free government, social order and the enjoyment of civil, social and individual rights, has been emphatically urged with all the eloquence and wisdom of statesmen and philanthropists.

These vital truths have been so often and with such deep earnestness expressed, that they seem to have, in no small degree, lost their power over the public mind, and are regarded by many as idle truisms.

It is unnecessary, and it would be of but little avail, to repeat the all-important considerations that have been presented on this subject. The education that is now needed and demanded for all classes, is such an education as will best fit each and every individual for life's work and life's duties in the varied spheres and conditions in which they will find their proper place. This is the great problem of the age. There is none that appeals with such force to every benevolent and patriotic heart, or that demands such wisdom to solve as this. It is evident in the first place that there must be a deep and abiding interest in this subject in every parent and in every friend of humanity. There must be active and united coöperation. All must strive harmoniously and liberally to secure the grand object in view. The constant and only aim should be to improve and to elevate our schools by the adoption of the wisest and best methods of instruction that have been found to be the most successful. Whatever is excellent and praiseworthy should be approved and judiciously commended, and whatever is defective should, after careful criticism, be pointed out and corrected.

The art of teaching, like all other arts, is progressive. There are no stereotyped methods to be pursued.



Every true teacher will diligently avail himself of the largest experience of the ablest instructors, and will be extremely cautious not to adopt too hastily radical changes or untried experiments that confident reformers would introduce. The youthful mind surely ought not to be experimented with by unskilled or inexperienced theorists.

A true education develops and trains all the faculties harmoniously. It is not unusual for a teacher, desirous of notoriety, to select some particular study or some new method, and to devote all his energy to that, to the partial neglect of others of equal importance; and if he succeeds, by awakening a deeper interest in his pupils, to secure unusual results, he ascribes his success wholly to his new method, and confidently insists upon its universal adoption. Such one-sided progress should be received with some degree of caution.

In order that the very best facilities of practical instruction may be furnished to all classes, I would earnestly recommend that a room be opened in our High school building for a class of pupils who might enter with lower qualifications and pursue those branches of study that specially fit them for the vocation they intend to follow when leaving school. Such a class would be the beginning of an industrial or technical school, which is now imperatively demanded to meet the increasing wants of the public. The pupils joining such a class should be specially and thoroughly taught

in the elementary principles of the mechanic arts, the laws of trade and in all kinds of mercantile and commercial transactions; and more particularly in drawing and its application to all the varied industries in which so many of our youth will soon be engaged. By the opening of such a room in our High school but little additional expense will be required. It will not be necessary to change the grades of our schools in the least, but will afford an opportunity to such pupils as wish to complete their education at an earlier period, and also to pursue such studies and such only as will best prepare them in the shortest time for their intended avocation. Were such facilities afforded, parents would be inclined more frequently than they now are, to study the natural tastes and talents of their children, and would choose for them such a sphere of active life as would be best suited to their tastes and natural capacity. To educate a child without any specific object is to overlook the noblest aim of life.

It is sometimes urged that it is not just and equitable to tax the property of the rich and of those who have no children to educate the children of the poor. But what security is there of life and property without a moral and intelligent community? And how soon would capital lose its value where there were not skill and intelligence to use it? Our youth will soon become active citizens and legislators, and will direct and control our municipal affairs. How great, then, is the responsibility of those who are to decide the future.

It is a well-known and admitted fact that there is often, in ignorant masses, and in those who have received only a partial or defective education, a volcanic force that is ever gaining strength; and unless seasonably checked will, sooner or later, burst forth in all its latent fury, with its wide-spread desolation and ruin. Because these fearful consequences are remote and not apparent they excite but little alarm. An education that does not bring the lower nature into the subjection and control of the higher, and make it the instrument and expression of the higher, fails of its highest and its noblest purpose.

We may go to our State Farm and there examine into the causes, remote and near, that have brought together so many objects of sympathy and compassion, and we shall find that a very large per cent. of the whole number have, through ignorance or a defective education, violated the fundamental laws of being, and are now receiving the penalty. The law of heredity is an inflexible law. It is not only a revealed truth, but one confirmed by history and extended observation, that the faults and sins of parents are visited upon the children even to the third and fourth generation.

If we were to make a careful examination and estimate of the cost of these benevolent, penal and reformatory institutions, and the necessary police regulations, and compare the cost with what we are paying for our free schools, every thoughtful and reflecting

mind would be amazed at the result. So long as there are such large numbers growing up in ignorance or with a defective education, the sad results will inevitably follow.

It is confidently expected that the General Assembly, during its present session, will pass a judicious truant law that will not infringe upon the duties and rights of parents, but will effectually check the alarming and increasing evils of truancy and absenteeism which are now seriously affecting the efficiency of our schools. This subject has been before the General Assembly more than twenty years.

The Superintendent, in his report in 1857, made the following statement: "The evils of truancy and absenteeism from school still exist, without any abatement. By their increasing virulence and force they are undermining the very foundations of our school system. And until some judicious remedy can be provided or effectual check devised, the wise counsels of the friends of education, the liberality of an intelligent community, and the efforts of teachers will, in a great measure, be rendered unavailing and nugatory. It was hoped that the General Assembly, at its last session, would, in its wisdom, have passed some salutary laws by which this threatening evil might be mitigated; but we are doomed again to disappointment, and must labor on with the means already in our power." Such was the condition of our schools in 1857. During the last twenty years

this evil has very largely increased, and has been one of the principal obstacles to the complete success of our schools. Very many of those who are now and have been inmates of the Reform School or State Farm have come from this class of truants and absentees.

From the last school census it appears that the whole number of children in the city between the ages of five and sixteen is 19,819, while the whole number not attending any school is 4,118; and of the number whose names are registered in school, more than five per cent. of the absences is from truancy. Without some check to this evil what can we reasonably expect in the future?

There have been but few changes in our schools the past term. The building on Peace street has been furnished, and three rooms have been occupied. It will probably be necessary to open the fourth room the next term. The new building in the Third District will be completed by the beginning of the next school year; so that the Primary schools in this district which have suffered long will be relieved.

Most of our schools continue to maintain their high character for excellence. The teachers, with few exceptions, are earnest and faithful in their work, and are gradually improving their methods of instruction. They follow the routine of their text books much less than formerly, and aim to teach principles rather than dry details and technicalities.

During the short term now closed, the usual amount of work in our schools has been very generally well and thoroughly performed. The teachers, with but few exceptions, are entitled to high commendation for their earnest and faithful efforts to improve and elevate our schools. The results of the recent examination must, I think, satisfy every one not blinded by prejudice, that the public schools are not only maintaining their high character for excellence, but are, from year to year, gradually improving. Teachers are not only faithful in their duties, but are diligent in studying the progress of the science of teaching and are availing themselves of the best methods that have been carefully tested. It is to be feared that some have injured their health by their constant and laborious duties.

The results of the examination of the several grades of schools have been universally satisfactory. I think the Committee who have taken the pains to examine for themselves must be fully convinced that the schools, with very few exceptions, have been evidently improving from year to year, and that they have now attained to a high degree of excellence.

We have graduated from the High school seventy-six pupils, most of whom received diplomas. This is the largest class that has ever graduated in a single year. More than two hundred and thirty have finished their studies in the different Grammar schools, and most of these receive their diplomas. This is a much larger

number than has left our Grammar schools in any one year.

The written examinations of the graduating classes in our Grammar schools have been remarkably gratifying. The percentage of scholarship has never been so large.

There has been a very marked improvement in penmanship. The spelling is as nearly perfect as can be desired. The results of the written examinations, covering more than six reams of paper, are now in the office of the Superintendent, and he would cordially invite the members of the Committee and all parents who are interested in the work and in the progress of the schools, to come and examine for themselves.

The average percentage of correct answers in all the studies of two hundred and thirty pupils, omitting a few who came from other schools, and those that have been obliged to be absent on account of sickness, is over 90 per cent. One girl obtained 100 per cent. in all the studies. A large number obtained 100 per cent. in several of the studies. The average per cent. in spelling of the fifty-two words was nearly 97 per cent. In the written examinations in history, geography and grammar, not one word in 600 of the common words has been misspelled.

The discipline of our schools has also very much improved, compared with former years. Teachers rely mainly on their personal influence and their moral

power in awakening the ambition of the pupils, and in directing them in the path of duty. Corporal punishment is seldom resorted to in our best schools. In one of our largest schools with more than five hundred pupils, there have been but two cases of corporal punishment in two years. In some of our best Primary schools the rattan is never seen.

It is rarely necessary to inflict corporal punishment in any school except in cases of truancy and when the home discipline is very lax. When there shall be wisdom enough and humanity enough in our General Assembly to pass a judicious truant law, we may then hope that corporal punishment will be very rare in any of our schools.

No new recommendation appears to be necessary at the present time. The houses recently built on Amherst and Peace streets have been occupied and are now well filled. The very pressing need of a new Grammar school-house in Elmwood, and an Intermediate and Primary house on Chalkstone avenue have been often urged, and it is earnestly hoped that the pupils and parents in these localities may soon have occasion to rejoice in the completion of these long desired accommodations.

The whole number of different pupils that have been registered in all our schools during the year now closed is 14,194, two hundred more than were registered the last year. There have been registered during the past



term 12,176, four hundred and thirty more than were registered the corresponding term last year. Of this number, 417 have been received into the High school, 3,552 into eleven Grammar schools, 2,961 into thirty-five Intermediate, and 5,246 into thirty-seven Primary schools.

Respectfully submitted,

DANIEL LEACH,  
*Superintendent of Public Schools.*

## REPORT ON EVENING SCHOOLS.

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*To the School Committee of the City of Providence :*

The Standing Committee on Evening Schools present this their annual report for the year 1880-81.

Pursuant to vote of the general Committee and by authority of the City Council, your Committee, on the evening of Monday, November 8th, opened nine (9) schools at the following places, viz.: in the school-houses on Orms, West River, Meeting, Front, Elm and Oxford streets, in the chapels on Harrison and America streets, and in Unity Hall, Olneyville.

The several schools were located in the same places as last year with the exception of the Federal Hill school. It will be recollected that this school, by reason of the Committee's inability to secure the chapel on America street, or other suitable place in that vicinity, was, in the season of 1879-80, held in the Fountain street school-house. The attendance, how-

ever, was so small in comparison with that on America street in former years, and the distance so great from the centre of the school population, that your Committee deemed it unwise to repeat the experiment, and so renewed their efforts to secure the chapel again, and were successful. The larger attendance and better work justify the return to the old locality.

Your Committee selected with care 103 teachers—most of whom had had several terms' experience in our evening schools; and they were duly appointed by the Committee on Qualifications. A few temporary teachers were appointed for the opening of the schools, but these, with such of the regular appointees as ceased to be needed as the term progressed and the attendance fell off, were discharged, and the schools closed on the evening of March 4th, after a session of seventeen (17) weeks, with 87 teachers.

It will be seen that the term did not commence as early as heretofore. The object of the delay was to avoid the interruptions and the irregularity of attendance usual in Presidential election years. Your Committee agree with their predecessors that the best results, as a general rule, come from an early commencement of the schools; but their experience in such years, from the interruptions in some of the schools by the demand and use of the rooms for primary meetings and for elections, and from the irregularity of attendance caused by political excitement and displays, led them

to believe that there would be no loss but probable gain by deferring the opening until after these disturbing causes had ceased. The results confirmed that belief and justified the delay.

The whole number of scholars registered was 2,227—9 less than in 1879–80. Of these 1,691 were boys and 536 were girls. It will be seen from the subjoined table that the average attendance was not so large as in the next preceding year—it being only 42 + per cent. against 45 + per cent. of that year, or 957 against 1020—a fact attributable in part to the unusual inducements for coasting and other out-of-door sports, in part to the revival of manufacturing interests, but chiefly to the intense and long-continued severity of the winter.

The entire cost of the schools was \$11,400.13, distributed as follows, viz.: salaries of teachers and janitors respectively, \$9,079.00 and \$108.00; gas, \$420.42; fuel, \$224.28; rents, \$750.00; books and stationery, \$340.00; repairs, etc., expended by the Department of Public Buildings, \$178.43. The entire expenditure for the season of 1879–80 was \$11,511.68.

From the reports of the several principals and from the observation and information gained from frequent visits to the different schools, your Committee believe that the discipline and order have generally shown an improvement over that of preceding winters, and that the improvement made by the pupils in their studies compares favorably with that of preceding winters.

Your Committee recommend that application be made to the City Council for the establishment of nine ordinary evening schools for a term of twenty weeks.

All which is respectfully submitted for the Committee.

E. C. MOWRY, *Chairman.*

ELISHA C. MOWRY,

JOHN W. CASE,

OREN WESTCOTT,

FREEBORN COGGESHALL,

FRED I. MARCY,

GILBERT E. WHITEMORE,

SPARROW H. NICKERSON,

*Committee.*

TABLE ACCOMPANYING REPORT OF COMMITTEE ON EVENING  
SCHOOLS FOR THE YEARS 1880-81.

| SCHOOLS.           | PRINCIPALS.        | WHOLE NUMBER REGISTERED. |       |       |            | Number of Teachers employed, including Principals, at commencement. | Number of Teachers, including Principals, retained through whole Term. |
|--------------------|--------------------|--------------------------|-------|-------|------------|---|--|
|                    |                    | Boys                     | Girls | Total | Aver. age. |   |  |
| Olneyville. ....   | Clark H. Johnson   | 328                      | 121   | 449   | 226        | 16  | 16   |
| America Street ... | Wm. Sheafe Chase   | 282                      | 98    | 380   | 157        | 19  | 16   |
| Front Street. .... | Wm. H. Sweetland   | 182                      | 28    | 210   | 117        | 11  | 11   |
| Meeting Street.... | R. B. Comstock...  | 165                      | 62    | 227   | 102        | 13  | 8  |
| Harrison Street... | C. A. Aldrich..... | 129                      | 65    | 194   | 89         | 13  | 10   |
| Elm Street . ....  | John T. Blodgett.. | 200                      | 80    | 280   | 87         | 14  | 9  |
| Oxford Street....  | G. T. Brown.....   | 194                      | 27    | 221   | 69         | 9   | 7  |
| West River Street. | Irving Champlain.  | 126                      | 28    | 154   | 64         | 9   | 5  |
| Orms Street.....   | R. S. Mowry.....   | 85                       | 27    | 112   | 46         | 7   | 5  |
| Total.....         | .....              | 1691                     | 536   | 2227  | 957        | 111   | 87   |

| Year.   | Total Enrollment. | Average Attendance. | Per Cent. | Sum Expended for Salaries. | Cost per Scholar according to average for 20 Weeks. | Cost per Scholar according to registry for 20 Weeks. |
|---------|-------------------|---------------------|-----------|----------------------------|---|--|
| 1872-73 | 2,566             | 900                 | 35        | \$9,454 50                 | \$10 55   | \$3 68   |
| 1873-74 | 2,074             | 835                 | 40        | 9,662 45                   | 11 59   | 4 66   |
| 1874-75 | 2,228             | 993                 | 44        | 10,024 50                  | 10 09   | 4 54   |
| 1875-76 | 2,110             | 970                 | 45        | 11,959 50                  | 12 30   | 5 66   |
| 1876-77 | 2,351             | 1,040               | 44        | 12,367 90                  | 11 89   | 5 26   |
| 1877-78 | 2,693             | 1,302               | 49+       | 14,936 50                  | 11 49+  | 5 54+  |
| 1878-79 | 2,250             | 1,048               | 46+       | 9,406 00                   | 10 55   | 4 91   |
| 1879-80 | 2,236             | 1,020               | 45+       | 9,405 00                   | 10 73+  | 4 94+  |
| 1880-81 | 2,227             | 957                 | 42+       | 9,079 00                   | 11 16+  | 4 78+  |

# WRITTEN EXAMINATIONS.

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## HIGH SCHOOL.

### CLASSICAL DEPARTMENT.\*

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#### G R E E K .

##### I.

1. Name in order the elementary parts of the Greek verb.

What is the signification of the *augment*, and where is it found?

2. Give the endings for principal tenses in the active voice.

Give the endings for historical tenses in the middle voice.

3. Name the class to which each of the following verbs belongs, give the present of each, and describe its formation from the stem.

Xenophon's *Anabasis*, Book II., Chap. 2.

3-5. *πυνθάνομαι*.

5-1. *ἀκούσαντες*.

9-2. *σφάζαντες*.

9-4. *βάπτοντες*.

11-5. *λαμβάνειν*.

4. Analyze the following verb forms :

5-3. *ἐπείθοντο*.

9-2. *ἡγήσεσθαι*.

\*Specimens of examinations given during the school year, 1880-81.

- 11-2. ἀπολοίμεθα.
- 11-6. διαπορευόμενοι.
- 11-6. κατεδαπάνησαμεν.

## II.

- 1. Synopsis present system "to be"?
- 2. Inflect future indicative "to be."
- 3. Inflect present imperative "to be."
- 4. Principal parts in third person ἴστημι?
- 5. Synopsis aorist active τίθημι?
- 6. Synopsis present active in second person δίδωμι?
- 7. Inflect imperfect middle δείκνυμι.
- 8. Find in two places: ἴσθῃ; ἔστησαν; δεῖζον. Locate ἔστασαν; ἴστασαν; ἐστάτην; ἐστήτην.
- 9. Translate: Πατὴρ τούτου τοῦ παιδὸς ἐστὶν ὁ ἄνθρωπος ἐκεῖνος.
- 10. Translate: These men were the fathers of those boys.

## III.

- 1. Translate Anecdote of Lycurgus, Harkness' First Greek Book.
- 2. Give the synopsis of εἶπε, ἔταξε.
- 3. Write the gen. sing. and plural of πολίτας, κόμη, πόλις, σὺ, θυσίας.
- 4. Decline ἀξιῶντα in sing.; πρῶτος.
- 5. Give the principal parts of λέγων, πυνθανομένου.

## IV.

- 1. Translate Xen. Anab., VI., V., 7-10.
- 2. Give the stem of ὀρώγη, ἔχοντες, ἔστησαν, ἐπιτῆσθαι, ὦσιν.
- 3. Construction of μεσούσης, ὀρώγη, λόχους, δέη, ὦσιν?
- 4. Principal parts of τεταραγμένοι, ἐμπίπτωσιν?



5. Composition and derivation of ἐπιβοήθησοντες? Synopsis of ἔστησαν?

V.

1. Translate Xenophon's Cyropædia, IV., I., 1-3.
2. Construction of χρόνον, ἐξέρχοιτο, σωτηρίας, ὦν, πύθωμαι?
3. Synopsis of χροή, τετυχήχαμεν, ἀποδιδόναι?
4. Inflect ἀντεξῆι, ἀπήγαγεν, πύθωμαι.
5. Give the nominative of all the participles of the same voice of μείνας, μαχέσθαι, στάς.

VI.

1. Translate Homer's Iliad, III., 1-14.
2. Give the Attic prose forms for κόσμηθεν, ἡγεμόνεσσιν, ἴσαν, ἴδτε, φύγον, ταίγε, ῥοδάων, ἀλεξέμεν, κορυθῆσι, πεδίοιο.
3. Give the first person singular, indicative, present and aorist of πέτονται, φέρουσαι, ἀλεξέμεν, ὄρνυτο, ἐρχομένων.
4. Derivation of ἀθέσφατον, κατέχευεν, διέπρησσαν? Construction of ποιμέσιν, νυκτός?
5. Scan the ninth line and state the kind of line.

GREEK COMPOSITION.

I.

1. I admire the long streets of the city.
2. The majority of the citizens are in the tent of the general.
3. The young man is more worthy of honor than the soldier.
4. The mother is taller than the daughter.
5. In the country of the great king there is a beautiful park.
6. The father of the boy has a small garden, in which is a deep well.

## II.

It is said that there was in the army a certain Xenophon, an Athenian, who accompanied it without being either a commander or a soldier. A certain Proxenus, an old friend of his, summoned him from home, and promised him by letter that if he would come, he would make him a friend of Cyrus. Xenophon, having read the letter, consulted Socrates, the Athenian philosopher, in regard to the journey, and the philosopher advised him to go to Delphi and consult Apollo in regard to it.

## III.

The inhabitants of Sinope had heard that the land of the Cotyrites was suffering pillage from the Greeks, and feared for the tribute which was paid them from this city. They therefore sent legates to the Greeks with a spokesman who was accounted very able in oratory. On arriving where the Greeks were remaining at this time, they said that they had come in the first place to congratulate them for having been preserved from so many terrible dangers and for having proved victorious over their foes, and in the second place to demand that the Greeks should do them no injury.

## IV.

The Persian was found guilty of murder. He told me that Xenocides commanded them with two others. If the wise were to manage the affairs of the state, they would confer a great benefit upon all the citizens. I am here to see not only the city, but also the whole country. If you march in good order, I will praise you. I should like to see cavalry charging the enemy. We must bear what fortune sends. They did not know which way to turn themselves. He said that if he had a mina, he would give it to the slave. If the Persians of the present day were wise, they would be doing better.

## LATIN.

## I.

1. State the difference between the interrogatives *quis* and *qui*.
2. How does the agreement of an adjective differ from that of a pronoun?
3. Cæsar, p. 27, line 38: *multitudine*; construction and rule?
4. 28—18: *pugnatum est*; peculiarity and rule?
5. Give rule for sequence of tenses.
6. Name the principal tenses of the indicative.
7. Name the historical tenses of the subjunctive.
8. 27—25: *oppugnaret*; explain mood.
9. 28—7: *relinqueretur*; explain tense.
10. 28—24: *animadvertisset*; explain tense.

## II.

1. Locate and construe the following forms from the Catiline of Sallust:

Chap. 12, line 21, *movere*; 12—24, *polliceri*; 12—27, *esse*; 13—9, *tenire*; 13—17, *dicere*.

2. Explain the mood of the following verbs:

12—22, *proponeret*; 12—23, *foret*; 13—1, *dicerent*; 13—5, *deglutavissent*; 14—16, *discerneret*.

3. Locate the following forms, giving construction and rule:

12—23, *opis*; 12—28, *consilii*; 12—30, *hominem*; 12—31, *agendi*; 12—34, *egestatis*; 13—37, *Faesulas*; 14—2, *generis*; 13—24, *occultum*; 13—27, *mandandum*; 13—36, *locis*.

## III.

1. Translate from Cæsar, Book IV., Chap. I., ten lines ending with *educunt*.
2. Principal parts of *secuta est*, *transierant*, *premebantur*, *prohibebantur*, *educunt*?

3. Construction of *transeundi, agricultura?*
4. Location of *exagitati, bellicosissima, dicuntur?*

## IV.

1. Translate :

Ea tempestate seditionibus tribuniciis res publica agitabatur. P. Lucullus et L. Annius, tribuni plebis, resistantibus collegis, continuare magistratum nitebantur; quae dissensio totius anni comitia impediebat. Ea mora in spem adductus, Aulus, quem pro praetore in castris relictum diximus, aut conficiendi belli aut ab rege pecuniae capiundae, milites mense Januario ex hibernis evocat, magnisque itineribus pervenit ad oppidum Suthul, ubi regis thesauri erant.

2. Construction of *tempestate, tribuni, quem, conficiendi, rege?*
3. Etymology of *agitabatur, magistratum, impediebat?*
4. Principal parts of *nitebantur, relictum?*

## V.

1. Translate :

M. Tullius Cicero Cn. Pompeio, Magno Imperatori.

Ex litteris tuis quas publice misisti, cepi una cum omnibus incredibilem voluptatem; tantam enim spem otii ostendisti quantam ego semper omnibus, te uno fretus, pollicebar.

Ad me autem litteras quas misisti, quanquam exiguum significationem tuae erga me voluntatis habebant, tamen mihi scito jucundas fuisse.

Ac ne ignores quid ego in tuis litteris desiderarim, scribam aperte, sicut et mea natura et nostra amicitia postulat. Res eas gessi, quarum aliquam in tuis litteris gratulationem exspectavi; quam ego abs te praetermissam esse arbitror quod vererere ne cujus animum offenderes.

2. Explain mood of *ignores*. Explain tense of *desiderarim*.
3. Construction of *quantam, te, litteras, jucundas?*
4. Principal parts of *ostendisti, pollicebar?*

## VI.

1. Translate Cicero, "*Pro Rege Deiotaro*," IV., first fifteen lines.
2. Principal parts of *sumpta*, *movebatur*, *inclusam*, *quiescendum*, *profugisse*.
3. Construction of *consentientis*, *consulibus*, *sibi*, *nuntiis*, *essent*.
4. Compare *maxime*, *summo*; derivation of *extimescebat*, *concordiae*, *conspiratione*.
5. Change to direct discourse, Cæsar I., 36, fourteen lines.

## VII.

1. Translate Virgil's *Æneid*, X., 1-15.
2. Principal parts of *panditur*, *incipit*, *laccessere*, *suasit*, *rapuisse*.
3. Genitive singular of *domus*, *sedem*, *metus*, *Carthago*, *foedus*.
4. Gender of *castra*, *tectis*, *vētītum*, *metus*, *arcibus*.
5. Composition of *omnipotentis*, *bipotentibus*, *Coelicolae*, *discordia*, *componite*.

## VIII.

1. Translate Ovid *Meta*, V., 346-358.
2. Scan and prove line 355.
3. Form an hexameter verse from *terras*, *erraverit*, *quas*, *quas*, *undas*, *dea*, *per*, *et*.
4. Give the principal parts of *nititur*, *vomit*, *pateat*; derivation of *giganteis*, *ejectat*.
5. Gen. sing. of *Trinacris*; gen. plural of *sedes*, *caput*; nom. sing. of *crura*; gender of *pondera*, *tellus*; construction of *tibi*, *silentum*, *dies*, *terreat*.

## LATIN COMPOSITION.

## I.

Vesontio is the largest town of the Sequani. It is fortified by the nature of the place, and affords great opportunity for protracting a war, because almost the whole town is surrounded by a river; the

rest of the space is hemmed in by a mountain of great size. Hither Cæsar hastened by forced marches with all his forces, and having taken possession of the town stationed a garrison there.

## II.

After the senate had come over to Cato's opinion, the consul Cicero, directed that the conspirators should be led forth to punishment. There was at Rome, in the prison, a place called Tullianum. It was sunk in the ground, and was enclosed on all sides by walls, and by a roof of stone arches joined together. Its appearance was terrible. Into this place Lentulus was cast, and was there strangled by the capital executioners. He was a patrician from a very distinguished family, but of an evil character, and the end of his life was worthy of his deeds. Upon the others also of the conspiracy, punishment was inflicted in the same way.

## III.

The strife having been allayed, they hand over the letters to the praetors. The contriver of all these crimes was Cimber Gabinus. Cicero at once called this man to himself; then likewise he summoned Statilius and Cethegus, and after them Lentulus. It seemed good to the most eminent and distinguished men of the state that Cicero should open the letters, but he brought the whole matter intact before the public council. For he thought too great diligence was not to be feared by him. The senate quickly assembled in full numbers. In the meantime Cicero sent Sulpicius to the house of Cethegus to bring forth whatever weapons might be there; and he brought forth from the house a very large number of swords and daggers.

## IV.

That day on which a man is rescued from danger is not less joyous and memorable than the day of his birth. If he who founded a city

is exalted in renown to the gods, he who rescues the city deserves to be in honor among the citizens. Romulus had founded Rome, his posterity had enlarged it, Cicero preserved it. Catiline had already almost applied fire to the whole city: Cicero extinguished this fire. The conspirators had unsheathed their swords against their country; the consul had struck back their blades from the throats of the citizens.

## V.

The princes were so affected by the eloquence of Ulysses that they awarded to him the arms of the dead hero. Ajax had withstood single-handed the greatest perils, but he could not control his indignation and wrath at the success of his rival. He snatched his sword, and, uttering a few passionate and incoherent words, buried it in his breast which till then had never suffered a wound. The story is that where the earth was reddened by his blood a bright flower was produced with the initial letters of the name of Ajax inscribed on the centre of its petals. It seems strange that a beautiful flower should have sprung from the blood of so fierce and violent a warrior.

## ALGEBRA.

## I.

1. Out of a cask from which  $\frac{1}{3}$  had leaked away, 21 gallons were drawn and the cask was then half full. Required the capacity of the cask?

2. A man engaged to work 48 days. For each day that he labored he received 24 cents; for each day that he was idle he paid 12 cents board; at the end of the 48 days he received \$5.04. How many days did he labor and how many days was he idle?

3. \$2,850 is to be divided among three persons, A, B and C. A's share is to be  $\frac{6}{11}$  of B's, and C is to have \$300 more than A and B together. Required the portion of each?

4. An estate of \$7,500 is to be divided among a widow, two sons and three daughters. Each son is to receive twice as much as each daughter, and the widow \$500 more than all the children together. Required the portion of each?

## II.

1. What is reduction of radicals?

Upon what principle does the multiplication of radicals depend?

What is rationalization?

What is an imaginary quantity?

2. Reduce:  $\sqrt{7290 x^{3m} y^{6n+2}}$

3.  $\sqrt{243 x y^2} + \sqrt{192 x y^2} = ?$

4.  $\frac{1}{2}\sqrt{\frac{2}{3}} + \frac{3}{4}\sqrt{\frac{3}{8}} = ?$

5.  $(ax^2)^{\frac{1}{3}} + (xy)^{\frac{1}{4}} = ?$

## GEOMETRY.

1. Define a rhomboid, a sector of a circle, similar polygons, and the area of a surface.

2. To what are the interior angles of any polygon equal?

3. An angle formed by two chords, which intersect, is measured by what? Prove it.

4. The sum of the squares of the diagonals of a parallelogram is equal to what? Prove it.

5. Construct a triangle, having given the sum of the three sides and the angles at the base.



## FRENCH.

1. Translate: La ville de Genève occupe la déclivité de deux collines au centre d'un bassin formé par le rapprochement du Zura et des chaines secondaires des Alpes, à l'endroit où le lac Léman se termine en une pointe allongée, et où le Rhône reprend son cours apparent. Elle est partagée obliquement par le fleuve, que sépare en deux bras une île étroite formée dans les temps anciens par le dépôt des graviers. Resserrée dès l'époque de la Réformation dans l'enceinte de ses murailles Genève fut fortifiée au commencement du siècle passé d'après le système de Vauban; ce n'est qu'en 1850 que la démolition des remparts fut décrétée; Genève est aujourd'hui une ville ouverte.

2. Gender of *centre*, *Zura*, *se*, *cours*, *temps*?

3. Infinitive of *occupe*; *reprend*. Inflect *se termine*; *est partagée*; *fut fortifiée*.

4. *De Genève* what kind of genitive? Expand the relative adverb *où*. Write out 1850.

5. Translate: Behold cities which occupy beautiful slopes of hills that ancient rivers separate.

6. Which city is that one, and which is that one whose walls terminate at this spot?

## EXAMINATION OF FOURTH CLASS FOR PROMOTION.

## LATIN.

1. Translate Cæsar, I., 7, from "*ubi de ejus*."

2. Give the construction of *nobilissimos*, *sibi* (21), *sibi* (23), *memoria*, *Helvetius*, *inimico animo*, *itineris faciendi* and *maleficio*.

3. Explain the construction of *mittunt*, *dicerent*, *esse*, *liceat*, *concedendum*, *posset* and *convenirent*.

4. Change to the direct discourse in Latin the clause *sibi esse . . . facere liceat*; also *si quid . . . reverterentur*.
5. Translate Cæsar II., 20, as far as *hostium impediēbat*.
6. Decline *hostis, vis, domus, regens, ille*; compare *inferus, sæpe* and *bene*.
7. Give the principal parts of *caedo, cado, pello, quaero*, and a synopsis of *possum, conor*, and *eo*.
8. State the rule for genitive with certain verbs, and the rule for purpose and result.
9. Write in Latin: Was he not asked his opinion? Virtue is a glory to all. Piso was a man of the highest virtue.
10. Goodness must be highly esteemed. Virtue is better than wisdom. A conspiracy was formed in Rome when Cæsar was consul.

#### HISTORY.

1. Give an account of the Dorian invasion and of Greek colonization.
2. Give the events which led to the Persian invasions of Greece, and name the important battles between the Greeks and the Persians.
3. For what was the age of Pericles noted?
4. Name the famous lawgivers of Athens and of Sparta.
5. What were some of the causes of strife between the Patricians and Plebians in early Roman history?
6. Give a brief account of the second Carthaginian war.
7. What reforms did the Gracchi attempt?
8. What did Cæsar accomplish in Gaul, and what influenced him to cross the Rubicon?

ALGEBRA.

1. Define a fractional exponent, a coefficient, transformation of an equation, elimination, and simultaneous equations.

2. Multiply  $a^{m-1} + 3b^{n-\frac{1}{2}} - \frac{1}{2}c^{-2}$  by  $a-2b^{\frac{1}{2}}c^2$ .

3. Divide  $a^{2m} - 3a^m c^n + 2c^{2n}$  by  $a^m - c^n$ .

4. Find the highest common divisor of  $x^4 - y^4$ ,  $ax^2y^2 - ay^4$ , and  $x^4 - 2x^2y^2 + y^4$ .

5. Find the least common multiple of  $x^3 - y^3$ ,  $x^3 + y^3$ ,  $x^2 - 2xy + y^2$ , and  $ax^4 - ay^4$ .

6. Add  $\frac{4a^2}{1-a^4}$  and  $\frac{1-a^2}{1+a^2}$ .

7. Given  $ax + cy = b$  to find  $x$  and  $y$ .  
 $ax - by = c$ .

8. A has  $\frac{1}{3}$  as much as B; but if A should gain \$10 and B lose the same sum, they will have equal amounts. How much had each?

## ENGLISH AND SCIENTIFIC DEPARTMENT.

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### FIRST CLASS.

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#### POLITICAL ECONOMY.

1. State what a usury law is, and how it conflicts with the principles of Political Economy.
2. State what the rate of interest depends upon.
3. What are the causes for the variation in the remuneration of labor?
4. Define capital, and give its different forms.
5. What are the special advantages arising from a division of labor?
6. Describe direct and indirect taxation, and mention some of the different forms of each.
7. Describe the different forms of credit in use.
8. Give a brief account of the national bank system.
9. Mention some of the different kinds of paper money, and state what the effect of an over-issue of the same has usually been.
10. Upon what does the efficiency of labor depend?

#### ENGLISH LITERATURE.

1. What was the condition of the English language for three centuries after the Norman Conquest, and what changes did it then undergo?

2. Enumerate the works of Chaucer, and describe the principal one.

3. What were the characteristics of the "Elizabethan Age"? Name and classify the authors of that age.

4. Classify and describe Milton's poetical works.

5. Give an account of the life and works of Samuel Butler.

6. Give some account of the personal appearance and character of Alexander Pope. Describe two of his works.

7. Give an account of Sir Walter Scott's life and prose works.

8. Name ten works of Dickens. Describe one of them.

9. Name one work of each of the following authors, state the reign or century in which it was written, and the class of literature to which it belongs: Thomas Moore, Sir Thomas More, Robert Southey, Henry Fielding, Jonathan Swift, Sir Isaac Newton, Joseph Addison, John Gower, Thomas Gray, and Sir Philip Sidney.

10. Name the author of each of the following works, state the reign or century in which it was written, and the class of literature to which it belongs: "Cotter's Saturday Night," "English Bards and Scotch Reviewers," "The Ancient Mariner," "Peter Bell," "The Task," "The Vicar of Wakefield," "Romeo and Juliet," "The Faery Queene," "The Vision of Piers Ploughman," and "Toxophilus."

#### ENGLISH ETYMOLOGY.

Give the derivation, history, and present meaning of the following words:

- |               |                 |
|---------------|-----------------|
| 1. Arena.     | 10. Mizzen.     |
| 2. Bedstead.  | 11. Mile.       |
| 3. Curate.    | 12. Parliament. |
| 4. Carnival.  | 13. Quiz.       |
| 5. Doff.      | 14. Sincere.    |
| 6. Euphonic.  | 15. Spinster.   |
| 7. Fortnight. | 16. Telegraph.  |
| 8. Geometry.  | 17. Vixen.      |
| 9. Lyceum.    |                 |

18. Give the spelling rule for *y* preceded by a vowel, with examples. Why are *lay*, *pay*, and *say* called irregular verbs?
19. Give the meanings of the Latin, Greek, and Anglo-Saxon prefixes *a*, with an example of each.
20. Give five suffixes which have a diminutive effect, with examples and application of spelling rules.

#### ASTRONOMY.

1. Explain two methods of finding the latitude of any place on the earth. If the sun's altitude above the southern horizon at noon to-day (June 17) were  $50^{\circ}$ , what would be the approximate latitude of the place?
2. Name and describe five different mountings of a telescope to be used for astronomical purposes.
3. Explain the difference between sidereal and solar time; also between apparent and mean solar time.
4. What is the cause of twilight? Find from the globe the beginning and duration of morning twilight to-day, at  $55^{\circ}$  north latitude.
5. Define horizontal parallax and annual parallax. Give the parallax of the sun, of the moon, and of the nearest fixed star. Compute the distance of a heavenly body which should have a horizontal parallax of  $3^{\circ}$ .
6. Explain the causes of lunar and of solar eclipses. How many may occur in a year? Give explanation of relations to moon's nodes.
7. In what respects do the planets which are further from the sun than the asteroids differ from those which are nearer? Give the number of moons for each planet. Name the planets by pairs of similar size.
8. Name and define the different parts of comets. In what kinds of orbits do they move?
9. What is the proper motion of the fixed stars, and how may it be caused?
10. Describe Taurus and Ursa Minor.

## GEOLOGY.

1. Classify and describe garnet, marble, gneiss, shale, and amethyst.
2. Define dip, strike, fault, anticlinal, and synclinal.
3. Explain the transporting power of water.
4. Describe the different kinds of lavas and other materials produced by volcanoes.
5. Describe the different steps of ordinary mountain-making.
6. Describe each of the following, state the class to which it belongs, and the age and country in which it existed: dodo, mastodon, calamite, eurypteris, and baculite.
7. Give the kinds of rock for each period of the Silurian age, with a general statement of the parts of the United States where rocks of this age are found. Which periods of that age are not represented in the Mississippi valley?
8. Give an outline of the classification of reptiles. When were they introduced? When were they most prominent? Describe two important fossils of this class.
9. Give the divisions of cenozoic time, in full. In what parts of the United States are tertiary rocks found?
10. Name five useful substances obtained from the rocks, with the localities and ages of the rocks for each.

## CONSTITUTION OF THE UNITED STATES AND RHODE ISLAND.

1. Explain the relation of the state governments to the United States government.
2. Describe the charter form of government in the colonies.
3. Write and discuss Art. I., Sec. 4, Cl. 1 (Election of Senators and Representatives). State the provisions of 1866 in regard to the election of Senators.
4. Write and discuss Art. I., Sec. 8, Cl. 2 (Power to borrow money). Explain the operations of refunding the national debt.
5. What are the powers and duties of the President of the United States?

6. Write and discuss Amendment V. (Indictment).
  7. Write and discuss Art. IV., Sec. 2, Cl. 1 (Privileges and immunities of citizens). Explain the Civil Rights Bill.
  8. What territory was acquired by the Louisiana purchase, and what constitutional questions were involved?
  9. Name the three classes of voters in Rhode Island, and give the qualifications of each.
  10. How are Supreme Court judges elected in Rhode Island, and how long do they hold office?
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## SECOND CLASS.

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### CHEMISTRY.

1. Explain the use of *mono*, *bi*, *ide*, *ate*, and *ite*, with an example of each. What are used as equivalents of the first three?
2. What is the composition of the atmosphere? Is it a chemical combination or a mechanical mixture? Give two proofs.
3. Define quantivalence and atomicity of elements. How are they learned? Give the different degrees of quantivalence for chlorine, phosphorus, sulphur, mercury, and iron, and name one substance illustrating each quantivalence.
4. Define allotropism. Name five substances which have allotropic forms, and briefly describe the allotropic condition of each.
5. Describe the physical properties of sulphuric acid. Give its graphic formula. Compute the number of grains of each element in one kilogram of the normal acid.
6. Describe the preparation and properties of free cyanogen, with equation. Give its volumetric composition and vapor density. Name three common chemical compounds containing it, with their most prominent properties.



7. Describe two modes of dyeing with indigo. Name five other important organic coloring matters.

8. State whether any reaction can be produced by the law of insoluble compounds in each of the following combinations, with equations and color where possible: calomel and copperas, corrosive sublimate and potassic iodide, lunar caustic and common salt, saltpeter and Epsom salt, sugar of lead and Glauber's salt. In the last equation, given 5 lbs. of the substance first named, required the weight of the precipitate.

9. Describe aluminum. Write an equation to show the precipitation of its hydrate from alum. Which will yield the most hydrate, ammonia alum or potash alum, and why? For what are the oxide and hydrate used?

10. Give the graphic formulas of sodium nitrate, ammonium chloride, light carburetted hydrogen, ethyl hydrate, ferrous sulphate, potassium ferrate, ferric chloride, lithium perbromate, calcium hypsulphite, and potassium hypoiodite. Give the common names of the first five.

#### BOOK-KEEPING.

1. Define the terms debits, credits, bills receivable, bills payable, and liabilities.

2. State the two methods of Book-keeping, and give the distinctions between them.

3. Explain the plan of keeping books known as "journalizing monthly," and name the books of original entry.

4. Describe and state the use of the check, bill, sales, and invoice books.

5. Make out a bill book, and show the proper entries for two each of bills receivable and bills payable.

6. Make out a check book so as to show the following transaction: J. Smith deposited in the First National Bank, Providence, July 1st, 1880, \$10,000; July 10th, \$5,200; 13th, \$322; 20th,

\$5,220. Drew checks, July 5th for \$2,522.53; 9th, \$3,442.20; 15th, \$2,788.62; 23d, \$10,720.50.

7. Make a balance sheet from the following trial balance, J. Smith and T. Jones, partners:

|                             | DR.        | CR.        |
|-----------------------------|------------|------------|
| J. Smith, - - - - -         |            | \$2,700 62 |
| T. Jones, - - - - -         |            | 2,700 62   |
| Cash, - - - - -             | \$5,622 00 |            |
| Interest, - - - - -         | 200 00     |            |
| Expenses, - - - - -         | 2,500 00   |            |
| Bills receivable, - - - - - | 1,459 24   |            |
| Bills payable, - - - - -    |            | 1,818 00   |
| Profit and loss, - - - - -  |            | 2,562 00   |

8. Post the following, and close the ledger account, for Adventure to Canton:

|                    | DR.         |                        | CR.        |
|--------------------|-------------|------------------------|------------|
| Bills payable, - - | \$11,133 00 | Hughes, Miller, & Co., | \$1,562 22 |
| Interest, - -      | 100 00      | Discount, - -          | 100 50     |
| Profit and loss, - | 1,522 00    | Ship Massachusetts,    | 1,525 30   |
| Cash, - - -        | 7,552 00    | Sales No. 3, -         | 2,561 20   |
|                    |             | Sales No. 2, - -       | 3,455 15   |

Journalize in day book form the following:

9. Providence, June 17th, 1880.

Sold to P. Bates & Co., 20 hhd. N. O. Molasses, 2,000 galls., @ 27c; 100 bbl. prime beef, @ \$19; 100 bbl. mess beef, @ \$11.50. Received cash, in part, \$1,295; their note at 60 days for balance, including discount, \$1,308.74.

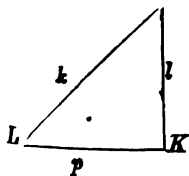
10. Providence, October 1st, 1880.

Bought of John Smith & Co., 125 bbls. superfine flour, @ \$4.25; 100 bbls. mess pork, @ \$9; 600 bbls. mess beef, @ \$11; 100 bbls. prime beef, @ \$8.50; 50 bbls. hams, @ \$16; 50 bbls. pearl ashes, @ \$4.50. Paid in part, 14 hhds. sugar, 15,400 lbs., cash for balance.

TRIGONOMETRY.

1. Find the cube root of .00059.
2. Find the value of  $\left(\frac{38.47 \times 363 \times 6}{.037 \times .576}\right)^{\frac{1}{3}}$ .
3. Given the hypotenuse of a right-angled triangle equal to 69.18, and the angle at the base equal to  $54^{\circ} 27' 36''$ ; to find the perpendicular.
4. Given the two sides of a right-angled triangle equal to 75 and 50.59; to find the hypotenuse.
5. Given in an oblique-angled triangle, two angles equal  $70^{\circ} 21'$ ,  $54^{\circ} 22'$ , and the side opposite the first equal to 125; to find one of the other sides.
6. Given three sides of a triangle equal to 40, 34, and 25, respectively; to find one of the angles.
7. Define the terms sine, versed-sine, co-sine, and co-versed-sine, and draw these functions for an arc in the second quadrant.
8. State what the arithmetical complement is, and its use.

9.  $P$  In the triangle  $L K P$ , right-angled at  $K$ , give the formulas for finding  $p$ ,



- (1). Given  $k$  and  $L$ .
- (2). "  $k$  and  $P$ .
- (3). "  $l$  and  $P$ .
- (4). "  $l$  and  $L$ .

10. Give and illustrate the rules for determining the algebraic signs of functions in Analytical Trigonometry.

## GEOMETRY.

1. Define the terms parallelogram, rhombus, sector, polygon, and zone.
2. State what an axiom is, and give three examples.
3. Book I., Prop. XXVIII. The opposite sides of a parallelogram.
4. Book II., Prop. VII. Equimultiples of two quantities.
5. Book III., Prop. XVIII. The measure of an inscribed angle.
6. Book IV., Prop. VII. The area of a trapezoid.
7. Book V., Prop. IV. The side of a regular inscribed hexagon.
8. Book VI., Prop. XI. A straight line perpendicular to one of two parallel planes.
9. Book VII., Prop. XVI. Any triangular prism.
10. Book VIII., Prop. IV. Convex surface of a frustum of a cone.

## HEAT AND ELECTRICITY.

1. What is the absolute zero of temperature? How is the absolute temperature obtained, C. and F.? If 100 cubic feet of gas, at  $-5^{\circ}$  C., be heated to  $300^{\circ}$  C., what will be its volume, the pressure remaining the same?
2. Define vaporization, evaporation, and ebullition.
3. Define latent and specific heat. How many thermal units will be required to raise 20 lbs. of ice from  $0^{\circ}$  F. to steam at  $220^{\circ}$  F.?
4. What is conduction of heat? Explain experiments to illustrate conduction in solids and liquids.
5. Explain the star, Y, and wheel armatures of magnets.
6. Explain induction in magnetism and in frictional electricity.
7. Describe the Leyden jar, and state the modes of charging it, with explanation.
8. Describe and explain the electric bells.

9. Describe the galvanometer with astatic needle, and its use.
10. Describe two methods of producing induced, or secondary, voltaic currents.

RHETORIC.

1. Punctuate the following, giving the rule for each point used :  
 "Old men are slaves to others young men to themselves"  
 Speaking of party Pope says there never was any party faction or sect in which the most ignorant were not the most violent
2. When is an author's diction pure? How may precision of diction be attained?
3. In what ways may the unity of a sentence be violated?
4. Give three rules to be observed in order to secure strength, or energy, in the construction of a sentence.  
 Reconstruct the following, giving the reason :  
 "It is absurd to judge Spenser by precepts which he did not adhere to."
5. Define antithesis and synechdoche.  
 Name and define the figures of speech in the following :  
 "Strike for your altars and your fires."  
 "The strong mind reeled under the blow."
6. Define and discuss wit as a quality of style. What is irony?
7. What is rhyme? What kind of rhyme in :  
 "Her look was like the morning star."
8. Name the kinds of poetry. To which class do tragedy and comedy belong? Define them. Define trochaic and dactylic verse, and give an example of iambic and of anapestic verse.
9. Give the proper heading, address, and subscription of a letter.
10. Define fiction. What are the parts of a discourse?

### THIRD CLASS.

#### ALGEBRA.

1. Write the values of  $a^0$ ,  $ab^0$ ; remove negative exponents from the expressions  $xy^{-3}y^3$ ,  $\frac{1}{a^{-5}c^7}$ ; write the reciprocal of  $a^3by$ .
2. Find the greatest common divisor of  $x^4-2x^3-4x^2+11x-$  and  $x^3-8x^2+17x-10$ .
3. Factor  $a^5m-9am^3$ ;  $a^6-c^6$ ;  $4x^2+4xy+y^2$ , and  $\sqrt{-4b}$ .
4. Simplify  $\frac{a + \frac{b}{c}}{a + \frac{c}{b}}$ .
5. Given  $x+2y=7$  and  $2x+3y=12$ ; to find  $x$  and  $y$ .
6. Extract the cube root of  $x^6+6x^5-40x^3+96x-94$ .
7. Find the value of  $x$  in the equation  $\sqrt{x+a} = \sqrt{x} + a$ .
8. Find the value of  $x$  in the equation  $3x^2-2ax=b$ .
9. The roots of an affected quadratic equation are 8 and  $-2$ ; what is the equation? The first term in an arithmetical progression is  $-6$ , common difference  $\frac{1}{2}$ ; find the fifteenth term.
10. Find the values of  $x$  and  $y$  in the equations  $x^2+y^2=65$ , and  $xy=28$ .

#### NATURAL PHILOSOPHY.

1. Define impenetrability, inertia, divisibility, a solid, and a liquid.
2. What is stable equilibrium? Give illustrations.
3. How far would a body fall freely in 15 seconds? What would be its velocity at the end of the 11th second? How far would it fall during the 6th second? Write the formulas.

4. Discuss the destructibility of energy. A body, weighing 10 lbs., has a velocity of 40 feet per second; what is its kinetic energy?
5. State four advantages arising from the use of machines.
6. What will a solid immersed in a fluid displace? To what is the loss of weight of a body immersed in a fluid equal? State the process of finding the specific gravity of a solid heavier than water.
7. Describe the Madgeburg hemispheres, and explain the principles involved.
8. State the three laws of the vibrations of strings.
9. Determine the length of a tube, open at both ends, that can resound the tone of a tuning fork vibrating 512 times a second.
10. Draw a diagram of a concave mirror; letter and name the parts.

#### MODERN HISTORY.

1. State the chief domestic object of Richelieu, and his method of accomplishing it.
2. How did the War of the Spanish Succession originate?
3. Describe the English country gentlemen of the 17th century.
4. Who was William Pitt, Lord Chatham? What did he do for England?
5. Describe the origin of Prussia.
6. Why did not Russia make progress before the beginning of the 18th century?
7. Describe the capture of the Bastile.
8. What was the influence of America upon France in the 18th century?
9. Give an account of Napoleon's return from Elba, and his subsequent career up to Waterloo.
10. Describe the passage of the Reform Bill of 1831.

#### MEDIEVAL AND MODERN HISTORY.

1. What was the ruling idea of Charlemagne? What did he aim to use in executing his design?

2. Of what did a fief properly consist? Mention the three influences that gradually undermined feudalism.
3. Describe briefly the career of Hildebrand.
4. What were the results of the Crusades?
5. Give a brief account of the Franconian line of emperors.
6. Mention the principal facts in the reign of King John.
7. What was the religion of Western Europe at the beginning of the 16th century? Give an account of the changes which took place, and of the man who initiated the movement.
8. Describe the Massacre of St. Bartholomew.
9. What was Cromwell's conduct at home and abroad after he became Lord Protector?
10. Describe the career of Gustavus Adolphus in the Thirty Years' War.

#### ANCIENT HISTORY.

1. Describe the rule of Pisistratus.
2. Describe the battle of Salamis.
3. Who was Alcibiades? Describe the Syracusan expedition.
4. Describe the death of Alexander and the results of his conquests.
5. Tell the story of Cincinnatus.
6. Name the classes of the Roman nation after the conquest of Italy, and state the powers the Roman government reserved for itself.
7. Describe the cause of the third Punic war, and the siege of Carthage.
8. Describe the battles of Pharsalia, Philippi, and Actium.
9. Describe the Roman forum and the temple of Janus.
10. Describe the last act in the downfall of Rome.

#### BOOK-KEEPING.

1. State what the debit and credit sides of the following accounts show, and how they are closed:  
Merchandise, cash, bills payable, interest, profit and loss.



2. Define bills receivable and bills payable.
3. Make the proper entries in Cash Book and Day Book in single entry :

(a.) March 1st, 1880. Sold Robert R. Greene 100 bbls. of flour @ \$7.00, and received in part payment C. R. Stewart's note, his favor, for \$500 for six months, and \$100 in cash.

(b.) March 2, 1880. T. H. Jones has paid cash to balance his account, \$56.91.

(c.) March 3, 1880. Bought 300 bbls. of flour @ \$5.00, and gave a check upon the Bank of Commerce for the amount.

4. Journalize : March 10, '80. Sold to S. H. Grover a house, No. 65 Main street, for \$8,000, and received in payment my note, his favor, now due, for \$3,000, a draft upon Roger Bacon for \$2,000, and cash for the balance.

5. Journalize : March 16, '80. Bought of R. A. Rogers 230 yds. of English cloths @ \$3.00, and gave in payment his note, my favor, due in sixty days, for \$800, the balance being paid in cash.

6. March 20, '80. Accepted Henry Grant's draft on me, favor of William Randall, for \$600, at sixty days' sight. Write the journal entries in his and my journals, and write and accept the draft.

7. Journalize : (a.) March 21, 1880. Exchanged notes for \$350 with S. R. Cooke, for our mutual accommodation. (b.) March 22, 1880. Thomas Brown paid \$50 to balance his account. (c.) March 28, '80. Paid clerk hire \$20.

8. March 30, '80. Journalize : Shipped to Charleston and consigned to William R. Williams 1250 bbls. of flour @ \$4.00, to be sold on our account and risk from our store ; 800 bbls. of extra flour @ \$5.00, purchased of David Stone on our note at 60 days ; and 100 bbls. of Haxall flour @ \$9.00, purchased of Sawyer & Brother for check on Bank of Commerce. Paid drayage and express, \$50.00.

9. Close the following account :

| DR.       |              | SOUTH RIVER RAILROAD STOCK. |            |           |             | CR. |          |
|-----------|--------------|-----------------------------|------------|-----------|-------------|-----|----------|
| 1880.     |              |                             |            | 1880.     |             |     |          |
| March 10. | To J. Smith, | 5                           | \$3,486 00 | March 11. | By cash,    | 7   | \$700 00 |
| " 20.     | " cash,      | 8                           | 2,762 00   | " 28.     | " sundries, | 6   | 1,250 00 |

Value of stock on hand March 31st, \$5,000 00.

10. Make a balance sheet from the following trial balance :

|                          |   |   |   |   | DR. | CR.         |
|--------------------------|---|---|---|---|-----|-------------|
| Proprietor,              | - | - | - | - | 1   | \$10,000 00 |
| Merchandise,             | - | - | - | - | 2   | \$3,000 00  |
| Cash,                    | - | - | - | - | 4   | 2,000 00    |
| Bills payable,           | - | - | - | - | 5   | 1,500 00    |
| Interest,                | - | - | - | - | 7   | 55 00       |
| Adventure to Charleston, | - | - | - | - | 9   | 4,865 00    |
| Thomas Brown,            | - | - | - | - | 10  | 2,801 00    |
| William O. Slater,       | - | - | - | - | 12  | 611 00      |

Inventory.

Merchandise, - \$5,000 00.

Adv. to Charleston, 4,000 00.

#### PHYSIOLOGY.

1. Describe the joints.
2. Describe the sebaceous glands.
3. Describe water as an element of the body.
4. What is the work of the saliva in digestion?
5. Name the five juices employed in digestion, what they act upon, and in what organs they are situated.
6. Describe the heart, and give the name of the discoverer of the circulation of the blood, with date.

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7. Describe the air passages of the lungs.
  8. Describe the difference of the arrangement of the gray and white matter in the cerebrum and cerebellum.
  9. Describe the manner in which the tongue is endowed with the sense of taste.
  10. Describe the three coats of the eye.

## GIRLS' DEPARTMENT.

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### SENIOR CLASS—FOURTH YEAR.

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#### ASTRONOMY.

1. What is the difference between a planet and an asteroid?
2. Mention one fact concerning each of the planets, and let no two facts be alike.
3. Give three corrections that have to be applied in determining the true position of a heavenly body, and explain one.
4. Would there be any tropics or polar circles if the earth's axis were not inclined to the plane of the ecliptic?
5. Explain why September 20 is warmer than March 20.
6. Describe the orbit of the November meteors, and state the theory respecting their relations to comets.
7. I left New Haven (long.  $72^{\circ} 55' 24''$ ) at  $11\frac{1}{2}$  o'clock A. M., and when arriving in San Francisco I found it to be 9 P. M. by their time, while it was 12h. 18m.  $3\frac{1}{2}$ s. A. M. by my watch; required the longitude of San Francisco.
8. At a time when the sun is known to be over the equator, a ship's crew see it at noon  $10^{\circ}$  south of the zenith; in what latitude are they?
9. Find by the globe the declination and right ascension of Arcturus.
10. Define "mean sun."

#### MENTAL PHILOSOPHY.

1. State the theories of Locke, Berkeley, and Hume.
2. Is space a reality or a conception of the mind? Reason for statement.

3. State how the idea of cause is obtained.
4. Define and illustrate *efficient* and *final* causes.
5. Define the terms *a priori* and *a postereori*.
6. Explain intuitional ideas.
7. State the object of reasoning.
8. Definition of proposition and of judgment.
9. State the character of the truths from which we reason and the validity of the result in each case.
10. Define pantheism, pessimism, and optimism.

MORAL SCIENCE.

1. Explain why the family is a divine institution.
2. Give the three most important duties parents owe children.
3. Explain what government ought to do for the governed.
4. In what respects is a free government superior to a despotic one?
5. Give the reasons for acquiring as far as possible beauty and grace.
6. Explain the formation of habits—the dangers and benefits arising from them.
7. Under what circumstances may ridicule be employed?

GEOLOGY.

1. Describe the formation of rocks by the mechanical agency of waters and winds.
2. Name the principal ores of iron. State which is useless for obtaining iron. Describe magnetite.
3. What work do the currents of the ocean perform?
4. How are rocks solidified?
5. State the belief in regard to the condition of the earth previous to archæan time.
6. What was the character of the life of the lower Silurian age? Describe the *lingula* and *orthoceras*.

7. Describe in full the plant life of the Devonian age. What were the vertebrates of that time?

8. What is believed concerning the formation of the chalk of the cretaceous era? Explain the formation of flint nodules.

9. What changes in climate are believed to have taken place during the tertiary?

10. Explain the formation of the terraces of the recent period and illustrate by a diagram.

#### SHAKSPERE.

##### RICHARD II.

1. Give a brief sketch of the reign of Richard II.
2. State the historical events brought out in the drama.
3. Name five striking passages.
4. How can the spirit of the age be learned from the drama.
5. Give the impressions received from the study of the play.

##### RICHARD III.

1. On what authority does Shakspeare depend for his historical facts? Under the influence of what dramatist was this play written? In what respects does the drama differ from history?

2. Name the historical characters introduced.
3. Describe the manner in which Queen Margaret is introduced, and give the dramatist's design.
4. Give the character of Richard drawn from this play.
5. Give passages illustrative of the power of conscience.

#### PARADISE LOST.

1. At what time in the life of Milton was Paradise Lost written? State the number of years he was engaged in its composition and the difficulties attending it.

2. What belief is expressed in the poem in regard to Christ? What is the object of the poem? What is the moral?
3. Give the reasons why the poem cannot be popular.
4. Mention five passages that you enjoy and their connections.
5. Give the argument of the first, second, and third books.

## LATIN.

## THE ÆNEID—BOOK III.

1. Lines 578–582. Translate.
2. Line 588. Synopsis of *surgebat*.  
“ 591. Construction of *cultu*.
3. Lines 599–603. Translate, beginning with “*Per sidera*.”
4. Line 608. Principal parts of *cretus*. What is the mode?
5. Line 621. Construction of *dictu* and *ulli*.  
“ 622. “ “ *sanguine*.
6. Lines 623–627. Translate.
7. Line 637. Parse *instar*.  
“ 641. Construction of *qualis* and *quantus*.
8. Lines 649–650. Translate and give the principal parts of  
*pascunt*.
9. Lines 655–658. Translate.
10. Line 662. Give the present indicative of *tetigit*.  
“ 663. “ “ perfect “ “ *effossi*.  
“ 669. “ “ present infinitive “ *torsit*.  
“ 683. “ “ perfect “ “ *excutere*.  
“ 690. “ “ future “ “ *relegens*.
11. Lines 670–674. Translate.
12. Line 671. Construction of *sequendo*.  
“ 677. “ “ *lumine*.  
“ 678. “ “ *caelo*.  
“ 683. “ “ *ventis*.  
“ 686. “ “ *discrimine*.
13. Lines 682–686. Translate.
14. “ 694–696. Tell the legend alluded to in these lines.
15. Line 695. Give the present infinitive of *egisse*.  
“ 700. “ “ perfect indicative “ *radimus*.  
“ 717. “ “ “ “ *docebat*.  
“ 718. “ “ present “ “ *conticuit*.

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- Line 71. Give the present indicative of *quievit*.  
 16. " 692. Construction of *sinu*.  
       " 694.       "       " *Ortygiam*.  
       " 696.       "       " *ore*.  
       " 702.       "       " *cognomine*.  
       " 711.       "       " *perichis*.  
 17-18. Lines 707-715. Translate.  
 19-20. " 716-718. Explain.
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## SECOND CLASS—THIRD YEAR.

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### ENGLISH LANGUAGE.

1. Give some account of the different branches of the early Celtic literature.
2. Describe the Anglo-Saxon literature, and name some of the principal works.
3. What peculiarities had the Anglo-Saxon parts of speech? Give the forms of the Saxon auxiliaries.
4. What was the influence of Alfred upon the language and upon the nation?
5. Give some account of Caedmon and his paraphrase.
6. What did the Saxons contribute to our language, and how can the Latin and Saxon portions be distinguished?
7. How were the literary wants of the Saxons and the Normans met? Who were the first composers in English?
8. By what means was the language developed in the fourteenth century? Give an account of the most popular ballads of the time.
9. Compare the growth of the language in the fifteenth and sixteenth centuries, and account for any difference.



10. How are we indebted to Italian and French influence? Describe Agglutination. When was it practiced?

#### GEOMETRY.

1. Define the terms tangent, plane, parallelogram, parallelopiped, pyramid.
2. What are parallel lines? Given two straight lines, what will determine whether or not they are parallel?
3. What are equal polygons? Name conditions upon which triangles may be proved equal?
4. Show that if four quantities are in proportion, they will be in proportion by composition.
5. What are similar polygons? Show that the altitudes of two similar triangles are proportional to the homologous sides.
6. State theorems showing what is the sum of the interior angles of a polygon, and what is the area of the convex surface of the frustum of a right pyramid.
7. Find the arithmetical value of the constant ratio of a circumference to its diameter.
8. Prove that every section of a sphere made by a plane is a circle.
9. In a circle whose diameter is 40 inches, what is the area of the regular inscribed polygon, of which one side is 20 inches long.
10. What is the diagonal of a square superscribed about a circle whose circumference is 31.416.

#### POETRY.

1. Name the essentials of good poetry, and explain the relation of poetry to the other arts.
2. What are the violations of correct rhyme in the following passages :

“I am alone :—my bugle strain  
May call some straggler of the train.”

"It was a lodge of ample size,  
But strange of structure and device."

"And withered heath and rushes dry  
Supplied a russet canopy."

"Here eglantine embalmed the air,  
Hawthorn and hazel mingled there."

3. Scan and describe the metre of the following:

"Row, vassals, row, for the pride of the Highlands!  
Stretch to your oars, for the ever-green pine!

O! that the rose-bud that graces yon islands,  
Were wreathed in a garland around him to twine!"

4. *The Lady of the Lake*. To what class of poetry does this poem belong? What are the characteristics of this class of composition?

5. To what time does the story of *The Lady of the Lake* belong? Give a brief account of the most important historical character introduced.

6. Locate Glenartney, Benvoirlich, Uam-Var, Lochard, and Aberfoyle.

7. Show the distinction between the terms glen, fell, dingle, dell, glade, brae, moor, down, strath, and scaur.

8. Give the story of the second canto.

9. Who were the Tine-man and Hotspur? What was the King's cause of enmity against the Douglass family?

10. Canto III. Explain what is meant by "river Demon," "noontide hag," "goblin," "Ben-Shie," and "charging steeds."

#### CHEMISTRY.

1. Explain the relation of oxygen to life.

2. What is the use of carbonic dioxide gas in the atmosphere, and how does it vary in proportion?

3. Mention two agents commonly used in bleaching, and explain the action of each?

4. Write symbols expressing the chemical composition of sal-soda, iron rust, copperas and chalk. What per cent. of iron rust is iron?
5. State the advantage and disadvantage of copper vessels for culinary purposes.
6. Explain petrification.
7. What proofs have we that the diamond is a form of carbon?
8. Describe olefiant gas. How much gas could be made from 10 ounces of alcohol?
9. Describe nitro-glycerine and tell how it is made.
10. Mention three materials which are used in extinguishing fires, and explain the action of each. Why is the lower part of a gas jet blue? What is the supposed cause of the will o' the wisp?

## PHYSICS.

1. Give four practical applications of the principle of expansion by heat.
2. Explain the action of freezing mixtures.
3. Change  $20^{\circ}$  Fahrenheit to corresponding Centigrade reading.
4. How many pounds of steam at  $212^{\circ}$  F. will be required to melt 350 pounds of ice at  $32^{\circ}$  F.?
5. Explain radiant heat.
6. Prove that there are two kinds of electricity.
7. Explain the charging of a Leyden jar.
8. Explain the distribution of electricity on conductors of different shapes.
9. Describe the action of a simple Voltaic element.
10. Describe the magnetic effects of a Voltaic current.

## LATIN.

## CÆSAR'S COMMENTARIES—BOOK II.

1. Describe the battle between the Roman army and the Belgian forces, explaining the advantages of Cæsar's position.
2. Chap. XV. Translate, beginning *Eorum fines Nervii*, to the end.

3. Give rules for all the subjunctives.
4. What is the subject of *pati*? The construction of *nihil in pertinentium* and *virtutis*?
5. Chap. XXIII. Translate to *Item alia in parte*.
6. Parse *ut* and *exanimatos*. Explain *locum iniquum*. Give the principal parts of *constiterant* and *resistentes*.
7. About how many soldiers had Cæsar in all? How many legions engaged in battle at this time, and how had they stationed themselves? How would a legion compare, in numbers, with a regiment?
8. Chap. XXVI. Translate, beginning *Qui quum ex equitum*, to the end.
9. What is the antecedent of *Qui*? Give the construction of *esset*, *cognovisset*, and *que (quantoque)*. Translate literally *nihil-fecerunt*.
10. Chap. XXXIII. Translate, beginning *ocisis*, to the end.

VIRGIL—BOOK I., TO 305TH LINE.

1. Translate lines 26–33. Give the construction of *alta* and *genus*. Explain *Judicium Paridis*, *genus invisum*, and *rapti Gany-medis honoris*.
2. Give the principal parts of the following verbs: *cano*, *vetor*, *luctantes*, *intinuere*, *ferit*, *torquet*, *urget*, *nantes*, *torrere* and *parce*.
3. Translate lines 102–107. Give the construction of *jadanti*, *miserabile*, and *visu*.
4. Translate lines 210–215. Give the nominative and genitive singular of *dapibus*, *tergora*, *viscera*, and *veribus*. Compare *veteris*.
5. Translate lines 297–301. Give the rule for the mood of *pateant* and *arceret*; construction of *Hospitio*. Who is meant by *Maia genitum*? Who was Dido?

## THIRD CLASS—SECOND YEAR.

## RHETORIC.

## I.

1. What is to be gained by the study of rhetoric?
2. What must the student do in order to make the greatest gain?

## II.

What properties of diction are most likely to be lacking in our speech? Why?

## III.

Of the following words that have recently appeared in the language, which may be regarded as authorized, and why: *paintress, shootist, audiphone, resurrect, burglarize*?

## IV.

Make the following loose sentence periodic, and explain the change: All his children were brought back with him, except one little girl who had been adopted into a family of Christian Indians, and was not allowed to leave them.

## V.

1. What is most likely to be the fault in the sentences of beginners?
2. How may it be avoided? How corrected?

## VI.

1. What is the effect of many subjects in a sentence?
2. What should be done with a sentence so constructed?

## VII.

1. Why should special attention be paid to the close of a sentence?
2. Give the rules on this point.

## VIII.

1. What is a figure of rhetoric?
2. Are figures in frequent use? Why?

## IX.

Point out and correct any lack of clearness in the following sentences :

(1). Mr. Carleton sent a man to his neighbor and he lent him the money he desired. (2). In one evening I counted twenty-seven meteors, sitting on my piazza. (3). Hard by, a butcher on a block had laid his whittle down. (4). The voice is only suspended for a moment. (5). James II. retained the officers who had served under his brother whom he could trust.

## X.

Point out the prominent figures in the following quotations :

"Some books are to be tasted, others to be swallowed, and some few to be chewed and digested."

"Go up, thou bald head!"

"And yet, dear heart! remembering thee  
Am I not richer than of old?"

"The bride kissed the goblet; the knight took it up;  
He quaffed off the wine, and he threw down the cup;  
She looked down to blush, and she looked up to sigh,  
With a smile on her lip and a tear in her eye."

## MEDIEVAL AND MODERN HISTORY.

## I.

1. Which of the historical races of Europe has been most important in modern history?
2. Which was the first to be Christianized?
3. Which was the last to be civilized?

## II.

1. Mention the chief events in the reigns of Henry II., John, Henry III., and Edward III., of England.
2. Who was the "Father of English Commerce?"

III.

1. From what king of France did England gain large possessions in France?
2. How were they gained?
3. What French sovereign took them back?
4. For what else is he noted?

IV.

Name three famous Diets, and state what important event is connected with each.

V.

1. What is a standing army?
2. How did the kings of the Middle Ages raise armies?
3. For what purposes did the kings of early modern times use their armies?

VI.

1. What was the ruling idea of James I., of England?
2. How was James I. indirectly concerned in the Thirty Years' War?

VII.

1. By executing Charles I., what sort of government did the English people hope to obtain?
2. What sort did they get?
3. In whose reign did the nation settle down to orderly government?

VIII.

1. What work of his grandfather did Louis XIV. undo?
2. Which was it, a benefit or an injury to France, and how?

IX.

1. Who was the best of the four Georges?
2. In what respects was he the best?
3. For what should Americans always remember his reign?
4. What vast territory was gained by England in this reign?

## X.

1. What body of men held supreme power during the Reign of Terror?
2. What became of the leaders?

## ENGLISH LITERATURE.

1. What is to be gained by a study of English Literature? Is it an attractive study? Why?
2. What thought does Wordsworth present in "We are Seven"? Is the reasoning correct? Why is the first stanza defective?
3. How is "The Lady of the Lake" divided? Write an analysis of the second canto.
4. Who created the character of Sir Roger de Coverly? Where do we find it drawn? Describe Sir Roger.
5. Who were the famous contemporaries of Goldsmith? How did his powers as a writer and as a talker compare? Name any other writers who have been noted for their conversational powers.
6. Where is the probable scene of Gray's "Elegy"? What is the subject of the poem? Quote some of the finest lines, stating why you think them fine.
7. Has the life of a writer any effect upon his works? Illustrate by reference to Scott and Gray.
8. Compare "The Cotter's Saturday Night" and "Tam O'Shanter" with reference to their moral character. Do they indicate the character of their author?
9. How are "L'Allegro" and "Il Penseroso" related to each other? Define the two titles. In referring to the parentage of Mirth and Melancholy, does Milton follow the mythological story? Give a reason for his course.
10. Explain allusions in the passage:

"But come, thou goddess fair and free,  
In heaven ycleped Euphrosyne,  
And by men heart-easing Mirth,  
Whom lovely Venus, at a birth  
With two sister graces more,  
To ivy crownéd Bacchus bore."



## PHYSICS.

## I.

1. How far can a mass be divided practically?
2. How far can it be divided in imagination?
3. Name a form of molar motion not mentioned in the book.
4. What are the different forms of molecular motion?

## II.

1. To which condition of matter does a body belong which, when compressed, does not return to exactly the former size?
2. What are fluids?

## III.

1. What is meant by centrifugal force?
2. Give a familiar example.
3. How does it affect the weight of a mass at different points on the earth's surface?

## IV.

1. What force keeps a pendulum vibrating?
2. If the force alone acted, what would the pendulum do when drawn aside and let fall?
3. Describe the motion of a compound pendulum.

## V.

1. If a body dropped gently into water displaces its own bulk of water, is it lighter or heavier than water?
2. If a body weighing 1 kg. displaces 1,000 cu. cm. of water, where will it remain with regard to the water?
3. If it displaces 2,000 cu. cm., where will it stay?

## VI.

1. When is a force-pump needed to raise water?
2. Give the reason.
3. What is the use of the air-chamber?
4. Upon what two properties of air does its action depend?

## VII.

1. Upon what does the velocity of sound depend?
2. State the law.
3. What is the velocity of sound in air at 34° F.?

## VIII.

1. What is the effect of making a string vibrate through a great space?
2. What is increased by so doing?
3. What elements of sound remain unaltered?

## IX.

1. Upon what does the pitch of a tone depend?
2. How can a vibrating string be made to give a higher pitch?
3. If the period of one tone is  $\frac{1}{164}$  of a second, and of another is  $\frac{1}{170}$ , which has the higher pitch?
4. Why?

## X.

1. How is sound transmitted by means of a Bell telephone?
2. How does a Bell telephone differ in principle from a telephone?

## LATIN.

## CÆSAR'S COMMENTARIES—BOOK II.

1. Translate Chapter IV. to "*De numero.*"
2. Give the reason for the mode of *quaereret, essent, esse ortus prohibuerint, sumerent.*
3. Give the principal parts of *quaereret, reperiebat, consedissee, expulisse, ingredi.*
4. Translate Chapter XIX. to "*Quum se.*"
5. Give the construction of *consuetudine, exercitus, praesidie impedimentis, equites.*
6. Decline *duae*. Compare *proxime*.
7. Translate Chapter XXVIII. to *Quos Cæsar.*

8. Parse *quum*. Parse *et* before *in commemoranda*.
  9. Give the antecedents of *quos*, *qui*, *se*, *ei*. What kind of a pronoun is each?
  10. Give the construction of *quos*, *qui*, *se*, *ei*.
- 

## FOURTH CLASS—FIRST YEAR.

## ANCIENT HISTORY.

1. What was the division of the human family? Name the historical race, and state the leading characteristics of the chief branch.
2. Mention five facts in connection with Assyrian and Babylonian history.
3. What was the character of Cyrus the Great, and what was the extent of the Persian Empire at his death?
4. State what you can of the physical features of Greece, and their influence on the people.
5. For what were Miltiades, Leonidas, Themistocles, Aristides, and Epaminondas prominent?
6. What led Rome to interfere with the affairs of Greece, and what was the result?
7. Name the national festivals of Greece. What was their influence on the people?
8. What was the character of the Romans in the early days of the republic? Name some of the famous men of those times. Give an item concerning one of them.
9. What was Caesar's position in the state after his wars? Describe his character; add anything you have read concerning him.
10. Give a brief sketch of the last days of Rome.

## PHYSIOLOGY.

1. What properties and powers does the spinal column possess? Of what use are the ligaments?
2. Mention five facts concerning the muscles.
3. What impurities gather on the skin? How and why should they be removed?
4. State two facts in regard to the liver, pancreas, peritoneum, gastric juice and pylorus.
5. Why should we not eat between meals? Why should we avoid eating when tired? What is the effect of over-eating? Name two consequences of rapid eating.
6. What fluid provides for the nourishment of the whole body, and describe its composition?
7. Trace the course of the blood from the left auricle of the heart to a small vein in the knee.
8. Name the organs of respiration. Describe one.
9. What would be the effect upon the whole system of crowding the lungs?
10. What is the temperature of the body and how regulated?

## ALGEBRA.

1. An express had been travelling 5 days, at the rate of 60 miles a day, when another was despatched after him who travelled 75 miles a day. In how many days did the latter overtake the former?
2. How much wine, at 9 shillings a gallon, must be mixed with 75 gallons at 13 shillings, that the mixture may be worth 12 shillings a gallon?
3. Two brothers set out at the same time from London and York, whose distance apart is 150 miles, and travel towards each other. One travels at the rate of 8 miles a day, the other 7. In what time will they meet?

4. A person engaged a workman for 48 days. For each day that he labored he received 24 cents, and for each day that he was idle he forfeited 12 cents. At the end of the time he received 504 cents. Required the number of days he worked, and the number of days he was idle.

5. A gentleman being asked the ages of his two sons, replied that they were to each other as 3 to 4, and that the product of their ages was 48. What were their ages?

6. What fraction is that whose numerator being doubled and its denominator increased by 7, the value of the fraction becomes  $\frac{2}{3}$ , but the denominator being doubled and the numerator increased by 2, the value becomes  $\frac{3}{4}$ ?

7. A merchant sold a quantity of cloth for \$75, by which he gained as much per cent. as the goods cost him. Required the cost.

8. Solve the equation  $\sqrt{x+12} = 2 + \sqrt{x}$ .

9. (a.) Indicate in two ways the square root of  $5x$ . (b.) Write two similar surds, and find their sum. (c.) Write two surds of the same degree, and obtain their product, reducing the result to its simplest form. (d.) In  $x^2y^{-3}$  remove the negative exponent without changing the value. (e.) What kind of a quantity do we call  $\sqrt{-4}$ ?

10. Expand  $(2x-3)^4$  by the Binomial Theorem.

#### BOTANY.

1. What is the difference in appearance and mode of growth between an underground stem and a root?

2. Name and describe five different forms of inflorescence with examples.

3. Name the living parts of an exogenous tree. How do you account for the slight thickness of the bark as compared with the woody portion, if a new layer of each is formed every year?

4. Name a characteristic which the Rose and Pulse Families hold in common; one of each not common to both. Name one dis-

tinguishing characteristic of the Crowfoot Family ; one of the Composite Family.

5. Explain the terms *monadelphous*, *ovary inferior*, *placenta*, *involucre*, *polypetalous*.

6. What are the essential organs of a flower? The essential parts of each of these organs?

7. Name ten articles of food produced by plants, and state whether or not they are true fruits. If so, give their distinctive names ; if not, the part of the plant to which they belong.

8-10. Analysis of a given specimen.

#### LATIN.

##### LATIN READER.

1. Translate: "Devictis Samnitibus, Tarentinis bellum indictum est, quia legatis Romanorum injuriam fecissent. Hi Pyrrhum, Epiri regem, contra Romanos auxilium poposcerunt. Is mox in Italiam venit, tumque primum Romani cum transmarino hoste pugnauerunt. Missus est contra eum consul Publius Valerius Laevinus. Hic, quum exploratores Pyrrhi cepisset, jussit eos per castra duci, tumque dimitti, ut renuntiarent Pyrrho, quaecunque a Romanis agerentur."

2. Give the construction of *Samnitibus*, *Tarentinis*, *bellum*, *Pyrrhum*, *auxilium*.

3. Give the principal parts of *fecissent*, *poposcerunt*, *venit*, *jussit*, *agerentur*.

4. Decline *hi*.

5. Give the principal parts of *indictum est* and of *missus est*. Give the composition of *indictum est*, *transmarino*, with the meaning of each. Give five English words derived from *mitto*.

6. Translate: "Multis in Asia feliciter gestis, Darius Scythis bellum intulit, et armatis septingentis millibus hominum Scythian ingressus, quum hostes ei pugnae potestatem non facerent, metuens,

---

ne, interrupto ponte Istri, reditus sibi intercluderetur, amissis octoginta millibus hominum, trepidus refugit."

7. Tell what the following conjunctions connect: *et, quum, ne*.
8. Give the part of speech and construction of *metuens, interrupto, reditus, amissis, trepidus*.
9. Give the reason for the mode of *facerent, intercluderetur*.
10. Give the synopsis of *refugit* in this mode, number and person.

# QUESTIONS

SUBMITTED TO THE

GRAMMAR SCHOOL SCHOLARS FOR ADMISSION

TO THE

HIGH SCHOOL, JUNE, 1881.

---

ARITHMETIC. 1881.

1. Multiply  $\frac{2}{9}$  by  $\frac{2\frac{3}{4}}{1\frac{1}{4}}$  and divide the result by  $\frac{1}{1.12\frac{1}{2}}$ .
2. I sent my agent \$5,040 to buy wool at 50 cents per lb., after deducting his commission of  $\frac{1}{4}$  per cent. How many 100 lb. bags did he buy?
3. Find the asking price for goods that cost \$6.00, so that 20 per cent. may be abated and yet a gain of  $16\frac{2}{3}$  per cent. be made.
4. How many short tons of coal will a bin 12 ft. in length, 8 ft. in width, 6 ft. in height, contain, allowing 54 lbs. to the cubic foot? How many bushels of charcoal will the same bin hold?
5. I lost  $\frac{2}{3}$  of my goods and sold the remainder at an advance of 75 per cent. What was the gain per cent. on the whole lot?
6. I sell sugar at  $8\frac{1}{2}$  cents a lb. and gain 10 per cent. What would have been my gain per cent. had I sold at 10 cents a lb.?
7. One-fifth of the sum received equals  $\frac{1}{4}$  of the cost. What fraction or per cent. of the sum received represents the cost?



8. At what price must I buy stock that by selling it at 90 per cent. I may make 10 per cent.?

9. How many half-pint cups of coffee will a circular pot hold whose bottom diameter is 6 inches, top diameter 4 inches, and whole height 8 inches?

10. Find the cost of plastering a room whose length is 25 ft., breadth 20 ft., height 10 ft., in which are 4 doors 3 ft. by 7 ft., 2 windows 3 ft. by 5 ft., and around which is a mop-board 8 inches high, at 20 cents per square yard.

#### HISTORY. 1881.

1. Give an account of John Smith and the story of Pocahontas.  
2. Give an account of the settlement of Wethersfield, Windsor, and Hartford.

3. Give an account of Roger Williams and the settlement of Providence Plantations.

4. Give an account of Braddock's defeat.

5. Give an account of Burgoyne's campaign.

6. Name the leading American and British officers of the revolution.

7. Define the constitution of the United States, and give a brief account of the convention that adopted it, and reasons for its adoption.

8. Of what is the Senate composed? What are the qualifications of a senator? How is the Senate classified?

9. Bills originate how, and how are they passed? Give an account of the veto power.

10. Give an account of Sherman's campaign to the sea.

#### GRAMMAR. 1881.

1. Write sentences containing plurals of story, money, radius, antithesis, canto.

2. Write the possessive singular of witness, Charles, Alice, genius, James.

3. Compare *ill, far, late, wrong, rough, silent, much, smooth, wise, grave.*

4. Write the principal parts of *sit, rive, lie (to recline), lay, set, work, drink, bend, fly, clothe.*

5. Give the rules for the use of capital letters.

6. State how the passive voice is formed. Write a sentence containing a verb in the passive voice ; also one in the passive form *not* in the passive voice.

7. Parse words in italics : *It was wise to unite their forces. I knew him to be a fine scholar. Not more than one-third of the number was saved. James is not so good a scholar as George, but is a better scholar than William. Let there be no strife between us. That house of yours is very beautiful.*

8. Correct the following sentences : *I never thought of its being him. If I were her I would do it. Whom do men say that I am? The general with all his soldiers was taken. Let each of them be heard in their turn. Are either of these men well known? Have either of you learned your lesson? After he had laid by his book he laid down to rest. I expected to have met you yesterday. They never set still in school.*

9. Write rules for the use of the comma. Punctuate : *Sink or swim live or die survive or perish I give my heart and hand to this vote. They tell us sir that we are weak unable to cope with so formidable an adversary but when shall we be stronger will it be the next week or the next year*

10. Write a letter of not less than ten lines and enclose it in an envelope properly directed.

#### GEOGRAPHY. 1881.

1. Describe the mountain ranges of the United States.
2. Name the exports and seaports of Spain.
3. Name the principal exports of Europe.
4. Name the civil divisions of South America and locate the capitals.

5. Draw Africa. Locate Algiers, Tunis, Cape Town, Zanzibar, Cairo.
6. Name the principal exports of Asia.
7. Locate the largest seaport of Turkey.
8. Name the chief sources of wealth in North and South Carolina.
9. Give the latitude of Washington, Chicago, Cincinnati, Paris, Rome.
10. Draw Maryland. Locate five towns.

## SPELLING. 1881.

Amerce, immerse, disburse, rehearse, intelligible, allegeable, illegible, ecstasy, autocracy, conventicle, receptacle, secede, succeed, supersede, apostasy, fuchsia, venison, benefited, befitting, chloroform, erysipelas, barbecue, pleurisy, infringement, abridgment, judgment, trisyllable, dissyllable, moneys, chimneys, weevils, measles, symptom, symmetry, miry, fiery, delectable, fascinate, architect, archetype, macerate, massacre, aspirate, generate, separate, defamatory, inflammatory, controversial, commercial, euthanasia, villainy, litany.



1882.]

CITY DOCUMENT.

[No. 20.]

ANNUAL REPORT  
OF THE  
SCHOOL COMMITTEE  
OF THE  
CITY OF PROVIDENCE.

PRESENTED JUNE 5, 1882.



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118661

IN CITY COUNCIL, June 5, 1882.

UPON THE ANNUAL REPORT OF THE SCHOOL COMMITTEE, for the year  
ending June 30, 1882.

READ, whereupon it is ordered that the same be received and printed.

Witness,

HENRY V. A. JOSLIN, City Clerk.



## REPORT.

---

TO THE HONORABLE the CITY COUNCIL OF THE CITY OF  
PROVIDENCE :

GENTLEMEN:—The School Committee present this  
their Annual Report for the year ending June 30,  
1882.

There have been no important changes in the condition of our schools the past year. Two Primary and two Intermediate rooms in the new school-house on Penn street; one room in Bridgham street and two rooms in Oxford street Grammar schools have been opened. The number of pupils that have been registered in the public schools during the year now-closed, is 14,436; 242 more than were registered the last year.

In the hands of competent and faithful teachers, these pupils, with few exceptions, have made commendable progress in the different studies. The appropriation made for the support of the public schools, was \$232,000. The amount expended, \$231,870.05. Deducting the amount expended for Evening schools, \$11,539.36, and the amount received for the tuition of non-

resident pupils, \$1,050, makes the cost of educating each scholar \$15.18. If we compare the cost of our school system with that of other cities, we shall find that it is as efficient and more economical.

There are two features in our school work, one of them entirely, the other comparatively new, to which we invite your attention.

On December 7th, 1881, Mr. Eben Rose organized a class in mechanical drawing at the High school. Much difficulty had been found in obtaining the services of a person adapted to the position. The generous courtesy of the management of the school of design, which controls by previous contract Mr. Rose's entire professional labors, alone permitted this arrangement. Thirty-seven lads were at once enrolled. Three lessons have been given weekly, each occupying a full hour. The scholars manifest peculiar enthusiasm in the performance of their tasks, and though the membership has been somewhat reduced by withdrawals from the school, not one has relinquished the study voluntarily. This appreciation of the thoughtful liberality of your honorable body is as commendable as it is gratifying, for the curriculum contains no knowledge more perfectly adapted to the daily requirements of artizans and business men, than that so recently afforded. An extension of the same privilege to the young ladies might prove the means of opening to them avenues of industry hitherto rarely trod by them, but more perfectly suited to their tastes and constitutions than many now over thronged.

In most of our Grammar schools especial attention has been paid during the year to the literature that engages the pupil's time out of school hours. Where it was found that no desire for reading existed, efforts were made to create in the pupil's mind an understanding of the delights afforded by a healthy use of good books. Where it proved that the children wasted their time in reading trashy, sensational stories, exertion was made to gradually create a taste for substantial reading that would tend, sooner or later, to displace the worthless reading that had perhaps so completely occupied their time out of school as to actually injure their health.

To accomplish these results, some portion of each week was spent in talking over during school hours, books that had been read, and in suggesting books that contained information upon, or tended to illustrate some subject brought before the attention of the scholars. In these ways it is believed that much good has been accomplished, and that a healthy taste has been developed among the pupils in this too much neglected department of education.

There is one difficulty in the use of our school buildings to which we desire most earnestly to direct your attention.

Because the most serious evil resulting from impaired vision is a corresponding weakness in the military strength of any people, it is of the utmost impor-

tance that every reasonable precaution should be taken to prevent its increase. That inadequate and excessive supplies of light to the eyes, when steadily employed for any purpose, are alike important causes is too generally acknowledged to require discussion or demonstration. It simply remains to indicate the fact that many of our school-rooms, by reason of their western exposure and deficient equipment, are entirely unsuited to the objects of their construction during a very considerable portion of the afternoons of the year. To a less degree a corresponding difficulty obtains in certain rooms with eastern exposure. Unless the sky be partially overcast the flood of light poured through the windows is well nigh overpowering ; if the blinds are closed the supervening darkness strains the eyes to their utmost capacity ; if the blind slats are partially turned, through the crevices, at their extremities and elsewhere, small but intense rays of direct light penetrate whose sharp contrast and constant flickering are scarcely less obnoxious than either of the preceding conditions.

Some teachers have been compelled to resort to various expedients at their personal expense to preserve their own eyes as well as those of their pupils. But this should scarcely be required of them. Painting the glass does not obviate the difficulty, for it entails darkness on cloudy days. Ground glass is open to the same objection. Venetian blinds are too expensive and few can properly regulate them. Opaque window shades, pref-

erably dark brown or dark green, and of not too dense material, afford the best methods of regulating the supply of light ; their first cost is not great, and a decided intimation to the teachers of their strict personal responsibility for their preservation would render the item of repairs insignificant.

But this is not the only cause of weak eyes. A greater one is their excessive use under artificial light for any purpose requiring concentrated attention. This condition obtains almost unexceptionally through the child's own volition, or the misguided ambition of his parents.

Scholars whose powers have been impaired by confinement in school or by studies exacted therein, are the rarest of curiosities ; but those whose mind and physique have alike been shattered by brilliant monthly performances at the Sabbath-school concerts, by literary societies of every name, by public and private musical studies, by juvenile parties and by other less innocent occupations, are frequently met. Childhood was intended as the preparatory school for life. Let the season be devoted to its appropriate work nor its energies wasted by unseasonable toil. The public school system is intended to meet the highest wants of the greatest number of our prospective citizens. That which is best adapted to the majority is best also for nine in every ten, if not ninety-nine in every hundred. The success of that system is ample proof of the realiza-

tion of the intent. Because it so fully meets the requirements of the majority it must well supply those of every individual. Parents therefore commit a greivous double wrong when they charge the results of their own negligence or vanity upon a course of training demonstrated by the experience of thousands, to be not only innocuous, but in every respect healthful.

From such causes spring the occasional agitations for the abridgment of school hours. The entering wedge is a pathetic plea for compassion upon primary children held in stern bondage for six long hours each day. But no class of pupils receive more benefit from their confinement. More than one-half of the entire number would spend the relinquished time in the street enjoying so much the more its debasing influence. More than three-quarters, representing alike the mansion and the tenement house, would the oftener visit their mothers' pantry, and there pluck the seeds of early physical decay. Another very large portion would be less comfortably and healthfully situated if properly deporting themselves within their homes. Even if the children should not learn a single thing, a spirit of intelligent humanity demands their retention, for to nine-tenths of the entire number early dismissal would prove a positive injury. But this sixth hour need not be wasted, in many schools it is not. General exercises calculated to stimulate the perceptive and reflective faculties, may be introduced with incalculable benefit, and suitable

petty gymnastic exercises, or motion songs afford appropriate vent for the natural exuberance of youth. For a speaker to interest and instruct little children, a peculiar order of talent is required, and much study. Here one may find ample opportunities to employ the broadest culture, the highest gifts. When all the teachers of our lower rooms realize this, there will be less remark of dull routine and long imprisonment, but instructor and pupil will alike increase each hour in wisdom, knowledge and happiness.

During the year, the matter of corporal punishment has received more than usual attention at the hands of your Committee. While it perhaps would never be wise to entirely remove the power from the teacher of inflicting it, the uniform course pursued has been to discourage its use, and to foster among the teachers the sentiment that it is to be used as an exception, rather than as the rule. It is with pride that the Committee point to schools, and those, too, formed of the youngest children, where not a blow has been struck during the year, and where, too, the discipline is second to none in the city. While not denying that the necessities of other schools may have absolutely required the use of this form of punishment, still it is the uniform policy of your Committee to hold up these schools to our teachers as examples worthy of their most careful imitation.

However perfect our school system may be, however efficient our teachers, however great the apparent re-

sults of the year, we must not forget that the root, the foundation of successful schools must be sought in the surroundings and incentives to action found in the homes of the pupils. If there is found hostility to school discipline, insubordination and rebellion will show themselves in the school. If there is found apathy to the utility of education, indolence and indifference will be clearly exhibited in every part of the pupil's school career. It is in the home that the child learns to understand and to desire the prizes of education, or to acquire an inclination for other, and too often for more questionable pursuits. As it has been since society existed, so to-day we find that to the home we must look for that impulse, that influence that alone can make the most complete success in a school career. It is the pride of our schools that they recognize and enforce this principle. Upon the parents they call to exert this influence, upon the children they urge the duty of listening to the teachings of the home.

Whenever our school machinery becomes so complex, its management so technical as to demand for its service only professional educators, from that moment will be dated a complete separation between the life of the home and the school, and from that moment we will date the birth of an ever increasing hostility to schools as a foreign power invading and threatening the home. But while the school and the home are one, in heart, in purpose, in methods, each by its influence sustaining



and supplementing the work of the other ; while it is not "you" and "I," but "we" in all things ; while it is not an inexorable system standing over against the home, demanding and exacting obedience to its unalterable laws, but a part of the very life of that home, yielding and accommodating itself to the changing conditions of time and place, just so long will each derive strength and life from the other, and just so long will the society where such accord exists reap the richest harvests from the fields cultivated by the labors, and ripened in the sunshine of so happy a union.

In our city we believe such a union generally exists. But it should be encouraged and strengthened in every way. Let the parents visit the schools ; let them know and interest themselves in the work that is there going on. It should not be the duty of the Committee man alone, but of every parent to inform himself of all that is going on in our schools. Let them learn the methods pursued, and acquaint themselves with the progress their children are making. In so doing they will become acquainted with the difficulties, and appreciate the perplexities which beset the steps of teacher and taught alike.

Surely parents who have experienced the difficulties attending the management of two or three children must know that when one teacher has twentyfold as many to regulate and control to a sufficient degree to secure proper attention to the lesson before them, she has no

easy task set before her. Surely they must know that successful as the teacher may be, times will come when the attention, the control of the scholars must depend alone upon the mere authority of the teacher. "Sire," said the old English pedagogue to his king, "if you do not remove your hat while in my school, my scholars will learn there is a greater than I, and will cease to respect me." So in the home, if the child hears constant criticism and complaint of the course of discipline pursued in school, he will learn to criticise and doubt the propriety of the teacher's every act, until obedience becomes a question of debate and the authority of the teacher is made to rest upon the immature judgment of the pupil. If, however, at home it is assumed that the teacher is right, if it is assumed that in all cases the teacher is presumed to know best, the authority of the teacher, and the question of obedience to that authority become intuitive; the child learns to recognize it as a potent force whose dictates demand as unhesitating obedience as do those of the law of gravitation, and a force that it becomes as natural to recognize as to draw the breath of life.

Should an unworthy teacher abuse the trust the possession of this power entails under our system, the way is plainly provided to make known the troubles, and to take the steps necessary to cause the evil to be eradicated.

Again, the home influence should be such as to set

before the pupil's mind the importance and utility of the pursuits that occupy the hours of school. What is the use of the slow and toilsome ascent to the hill-top unless we expect there to gain some reward to recompense the toil? If some brother or sister who has begun to earn a few dollars, or if some person who has amassed a fortune is the ideal constantly presented for imitation, why waste the time in treading a path that seems so indirectly to lead to the desired goal? Can any scholar be expected to take pleasure or make any substantial progress in pursuits that to him must seem so unmeaning and profitless? If such be the ideals the home presents for imitation, the teacher will vainly labor to instruct the scholar in the work of the school. But if in every home the importance, the utility of the studies pursued in school should be impressed by constantly presenting their acquirement as absolutely essential to true progress in life, exactly the contrary results would most certainly follow.

It is not needful, to enforce this lesson, that the home should be one where culture and learning abound. It can be as impressively, as earnestly presented where experience of the want of learning's power has taught the necessity of its acquisition. The idea to be inculcated is that the studies of the schools in themselves present the most interesting, the most profitable employment, that their acquisition should properly employ the undivided time and attention of the child during school

hours. With this atmosphere in the home, with this idea constantly in the mind; with the thought that failure in these duties will discourage every heart at home, that success will bring corresponding joy, you will find in every pupil's mind that incentive to earnest exertion without which the city's money will bring comparatively small returns. If in every home in our city these principles could be inculcated the results in the increased efficiency of our schools would surprise and gladden every one therein in any way connected with the education of the young.

Unfortunately, however, there is little hope that all homes in our city will be permeated with both or possibly with either of these sentiments. Besides this, there are many children who know nothing that can be called a home. Both of these classes of children will be, except in rare cases, hostile to the wholesome restraints and regardless of the advantages offered them in our schools. If they are not compelled to attend by the operation of some power strong enough to overcome their disinclination, they will never enter the doors of a school. It is for these two classes of children especially that some kind of an efficient truant law is required. Twenty years ago this June, the Superintendent of our schools in his report to the School Committee, and by them reported at that time to your honorable body, said: "It is with feelings of deep regret that I have again to bring

before you the increasing evils of truancy and absenteeism. These are becoming more alarming and threatening every year. No language of mine can adequately convey to you an idea of how much our schools are suffering from this cause. Every day hundreds are strolling in our streets, becoming familiar with the worst forms of vice, enticing others to leave their schools and to join them in their wickedness. The truant act on our statute book is perfectly a dead letter, it is of no use whatever. Is there not sympathy enough in the hearts of the truly benevolent; or wisdom enough in our legislature to devise some remedy for this most prolific cause of misery and crime in our city?"

These words come to us to-day with the double force of fulfilled prophecy and of prophetic warning. All persons who have ever given serious attention to this matter unite in asserting the absolute necessity for some enactment upon this subject. If we would protect our homes, our persons, our property, then we must present to minds, who have no conception of any other power than brute force, the truth that "in the universe nothing is great but mind."

If we would preserve the institutions that our ancestors have planted, and which it is our heritage to perpetuate, we must reveal to those growing up with the idea that the real or imaginary wrongs they are suffering are inflicted by an arbitrary power solely for its

amusement, the true relations those institutions sustain to themselves. If, in their blindness those who are so minded refuse to avail themselves of the means that are offered them to make them see their true condition, if they refuse to qualify themselves to perform those duties the state demands of every citizen, the law of the common good, aye, the law of very self preservation requires that adequate means be taken by the employment of the power of the state, to compel them, even against their will, to prepare themselves for the duties they will soon be called to perform.

Many of our states have already enacted laws looking with greater or less degree of effectiveness to this end. Just at this time when a senator from a western state has presented in the halls of congress, and there advocated with force and earnestness a proposition to apply a sum equal to nearly one-fifth of the entire annual income of the government and exceeding the annual expenses of the government for any year before our late war, to the cause of national education; it certainly seems as if we in Rhode Island, that have always prided ourselves upon the possession of all that can make public schools successful, and that have bestowed our means with lavish hand upon the support of schools, and especially the citizens of Providence, who have always stood in the front in all educational advances, should not neglect to take earnest efforts to adopt means to urge upon the legislature the

importance of recognizing in some practical form the existence of this elementary necessity in the work of any effective system of public education.

Respectfully submitted,

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| EDWARD D. BASSETT,   | } | <i>Committee.</i> |
| RICHARD M. SANDERS,  |   |                   |
| GEORGE B. PECK, JR., |   |                   |

EXTRACTS  
FROM THE  
QUARTERLY REPORTS OF THE SUPERINTENDENT.

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PROVIDENCE, NOV. 18, 1881.

*To the School Committee of the City of Providence :*

GENTLEMEN:—There are no new topics relating to our public schools that need to be considered at the present time. The paramount importance of the school department should ever be kept prominently before the public mind. It is an incontestable truth that the permanent growth and prosperity of the city depend far more upon the efficiency of this department than upon any other. There is, however, great danger that the engrossing occupations of business and questions of a political and a partisan character, with the varied and fascinating amusements, may be so absorbing as to withdraw the attention from this universally admitted fact. We are too prone to look at the present and to overlook or undervalue the forces and agencies that are surely moulding and forming the future. The question



that should ever take the precedence of all others, in the minds of the committee, should be, how and by what means and agencies can our schools be advanced to a still higher state of excellence and efficiency? What are the defects, and how can these be best remedied, and what are the obstacles and hindrances to be overcome.

Let our schools suffer and languish for the lack of a liberal and generous support; let indifference and apathy, in regard to their success and efficiency, become the prevailing sentiment; let ignorance among the masses, and vice, its necessary consequent, rapidly increase, and how soon will its blighting effects be seen in all that is now cherished with pride and that inspires hope for a prosperous future. How soon will our industries become paralyzed, and our social state be changed to disorder and confusion.

While foresight and prudence are the prominent characteristics of wisdom, they are far more conspicuous in individuals than in communities.

There is no safer investment that can be made, none that yields so sure and rich returns as that which is judiciously and economically expended in giving to all our youths such an education as will best fit them for all the duties and enjoyments of life. The rich fruitage of culture is seen, not only in well-ordered families, elevating the tastes to what is pure and ennobling in amusements and pleasures, but in the intellectual skill and power in all the activities of life.

For a community to advance in all that is truly great and good, it must have light in its dwellings—the light of intelligence and truth.

It is true that we have wise and judicious laws to protect and guard the physical health of the city, and to check the spread of contagious diseases, but there are causes and influences both secret and open, that are as surely and certainly undermining the *moral* health of the city, that are either entirely ignored or are regarded with comparative indifference.

The selection of teachers for our schools is a very responsible and often a very delicate and embarrassing duty. The best teachers for the several positions ought unquestionably, in all cases, to be appointed, without regard to favoritism or partiality.

The present method of examining teachers, as has been repeatedly stated, often fails as a test of their highest qualifications, and is not a sure guarantee of their future success. It is only in the school-room where their methods, their work, and its results can be carefully examined, that a correct judgment can be formed in regard to the qualifications of any teacher. The best scholars, those who have had a long and thorough preparatory training, when they enter upon their work without experience, often fail of complete success. There are qualifications, and those of the highest order, that can be acquired only from the example, advice and direction of skillful teachers of large experience.

Teachers who ranked high as scholars when in school and needed no assistance in their lessons, not unfrequently lack patience and sympathy with pupils of moderate capacity, until they have had an opportunity of learning how to adapt their instructions and explanations to every class of youthful minds. The most difficult and important work in teaching is to guide and lead pupils of every variety of tastes and capacities so that they may be able to apprehend clearly the simple elements of knowledge, and to compare, classify and combine them into beautiful products and practical results. It should, however, never be forgotten, that the most valued results in education depend far less upon what the teacher does, by imparting instruction, than upon what he enables the pupil to do for himself by quickening his powers, stimulating his ambition and in giving a right direction to all his energies.

There are many who aspire to be teachers who have not any natural talents or aptitude for teaching; and having completed a preparatory course of instruction, they press their application for an appointment with a persistent zeal that is often embarrassing to the committee.

When some of our school buildings shall be so arranged that our young candidates can serve an apprenticeship with some of our best and most experienced teachers, and learn from their example and advice how to teach and how to govern, we may avoid the frequent

mistakes that are sometimes made in the selection of teachers. From every year's experience and observation I am more deeply impressed with the absolute necessity of such an arrangement to the continued prosperity of our schools.

Every teacher, that is every true teacher, knows that there is a science in teaching as well as an art, and that this science embodies fundamental principles founded upon the laws of the development of the youthful mind. An accurate knowledge of these principles is a necessary qualification to complete success.

No artizan, however, in any trade or profession ever becomes skillful and expert by the study of theories alone, not even the most elaborate and profound. There must be an application of the ideas embodied in them to ensure perfect work. This art can be perfectly learned only by diligent and faithful practice under the advice and direction of the most skillful artists. In all trades and professions, theory and art are reciprocal, they act and react one upon the other.

It cannot be too emphatically stated, nor too often repeated, that the crowning work of every teacher is the forming and moulding of a pure and virtuous character. This should be the basis of all teaching. The first and the last lesson that should be impressed upon the youthful mind. It should never be omitted. There are certain moral principles which are vital and fundamental, that can be inculcated and enforced without interfering

in the least with any sect or infringing upon private judgment. Truthfulness, purity and integrity are the noblest virtues that form the basis of a pure character and that give ornament and joy to life. Without the inculcation and the enforcement of these priceless virtues, joined with self-reliance and self-control, all education is radically defective, and knowledge may be of but little value and is often perverted to the worst purposes.

In order to form a correct estimate of the character of a school, there should be, as far as possible, some uniform standard of excellence to which examiners and teachers might constantly refer. If some who examine give special prominence to one branch of study, and some to another ; if some judge of the condition of a school by the amount of work performed, and another by the fluency of the recitations, without regard to the time spent in acquiring it, it is evident that teachers, in order to meet the expectations of the different committees, will be often in doubt what to do, and will be continually changing their plans and methods. It should be generally understood not only what can, but what ought to be done under all the circumstances, both favorable and adverse. Outward circumstances often affect the character of a school far more than is generally supposed. Did the several committees in their examinations insist more decidedly upon thoroughness and accuracy, and less upon the amount of work performed,

our teachers would be encouraged and sustained in what they now understand to be an imperative duty.

It is an incontestable fact that youthful crime is increasing in our city, and that the criminals are almost entirely from the truants and absentees from school, and from that large class that roam our streets uncared for and unmolested. How long this state of things shall exist will depend upon the wisdom and courage of our legislators, who alone can impose a salutary check.

The sanitary condition of our schools should not be undervalued or neglected. We need in our youth vigorous bodies as well as cultured minds. Vigilant and constant care should ever be exercised, that the fundamental laws of health are not violated. There should never be in our schools any undue stimulus to excite the ambitious beyond their strength, and our school buildings should not only be attractive and comfortable, well warmed, lighted and ventilated, but physical exercise of some kind, adapted to the age and necessity of the pupil, should be daily practiced in every school.

Our schools continue in their usual prosperous condition. There have been no radical or important changes in management or in methods of instruction. It is now generally understood by all teachers that their constant aim should be to secure accuracy and thoroughness in all their teaching. There is, however, sometimes an ambition and a strong tendency to crowd our schools with too many studies and to attempt to accom-

plish too much in a given time. The marked distinction between knowledge and education is not always well understood. The accumulation, in the memory, of truths and facts which are not classified and wrought into a system may be designated knowledge, but it is in no true sense education. Far more is implied in education than the cultivation of the memory, although this is of the first importance. Pupils, at a very early age, must be taught to think, to reflect and to use all their powers and faculties.

I would recommend that our by-laws be so changed that the several committees to whom schools are assigned should visit and examine them at the beginning and at the close of the year, and not during the middle of the year, as at present. By this arrangement the committees will be able to judge correctly, not only of the amount but of the quality of the work that is done.

There has been, during the past term, a very large increase in the number of pupils, especially in the lower grades. Notwithstanding three new houses within a short time have been built, one on Amherst, one on Peace and one on Penn streets, and are now well filled, some of our schools are still crowded.

We have registered 1,036 more pupils this term than were registered the last term. Of this number, 515 have been received into the High school, with sixteen teach-

ers; 3,725 have been received into eleven Grammar schools, with eighty-eight teachers; 3,306 into thirty-five Intermediate schools, with sixty-nine teachers, and 5,666 into thirty-eight Primary schools, with one hundred and seven teachers, making in all eighty-five schools, with two hundred and eighty teachers, with 13,212 pupils.

At the meetings of teachers, recently held in different parts of New England, various subjects relating to our public schools have been earnestly and ably discussed. It is apparent from these discussions that teachers, generally, are wisely seeking the best methods and means by which our schools can be improved and brought to a still higher state of excellence and efficiency. While all seemed anxious to improve old methods and to correct real defects, some, with more zeal than wisdom, would make radical changes, discarding whatever is old, and substituting new theories that have had only a limited trial, and with only partial success; others, more conservative, seemed disposed to retain and practice what has been found, on trial, to be effective, gradually adopting the methods of those of the most successful and largest experience.

The novel and untried theories of those who have had but little or no opportunity to test their value should be carefully examined and received with distrust.

It has been wisely said that the course of a mariner is safer and far more certain when guided by the light



of a fixed star than when following a wandering comet, however long and brilliant may be its tail.

One very important question has been discussed—why is it that pupils, when leaving school, have forgotten so much that they learned when in school? This may be attributed to various causes. One of the most prominent is the neglect of the cultivation of the memory; from the old practice of crowding the memory with disconnected and unintelligible facts and useless dates, many have gone to the opposite extreme, and seem to regard this faculty as unimportant, forgetting the fact that what is not treasured up in the memory ceases to be knowledge, and is of no value.

One of the first requisites to improve the memory is the quickening of the mind of the pupil by exciting his interest and fixing his attention on what he is studying. The memory cannot be properly cultivated unless the mind is vigorously active. The pouring-in process, by continually talking to pupils without awakening in their minds thought and reflection, while it may amuse, like the stories of ghosts and goblins, is barren of good results, and is in no true sense education. An explanation and illustration, to be profitable, should be brief, intelligible and pertinent, while all new truths and facts should be made clear by comparing them with what is already known. There should be neither a deficiency nor an excess of explanation. Object teaching, when wisely employed, is of very great value, and can hardly

be over-estimated ; but it may be, and is sometimes, carried to a ludicrous extent. If we would promote the vigorous growth of the body, we should not make use of food not easily digested ; neither should we resort to a diluted pap.

Another important reason why so much is forgotten is that teachers often attempt to accomplish too much in a given time. Pupils should not be overtasked, neither should they be required to study much out of school, and thus seriously impair their health.

There is a proper medium to be observed, which requires skill and large experience to use wisely.

Another reason why pupils forget so much that they learn in school is that it is not sufficiently reviewed and assimilated with what has been previously acquired. It is only by constant repetition that knowledge can be retained in the mind. It is a common fault in teachers that they do not sufficiently teach the pupils how to use and apply the knowledge they gain. The rules of arithmetic and grammar are valuable only so far as pupils can apply the principles to produce accurate and correct results. This is equally true of all other branches of knowledge. Habits of accuracy are very early formed, and constitute the only firm basis of a good education.

From all the discussions that have been held it is very apparent that the success and efficiency of our schools depend far more upon the skill and ability of

teachers than upon any system or methods that have yet been devised. An incompetent teacher who enters upon his work with no other interest but to secure his compensation, will not be successful even under the very best system and under the most favorable circumstances, while a teacher who has had the necessary training and those natural gifts which are so invaluable, with the aid and experience of the best educator, will adopt a method of his own which will be eminently successful.

It is asserted that our system of free schools is a sham, a delusion and a failure. This is a very grave charge, and seriously reflects upon the wisdom, the foresight and patriotism of our fathers. It is the bounden duty of those who make this charge to substantiate it by incontestable proof—not by imaginary facts, but by undoubted truth. For if our free schools are a sham or a failure, the sooner they are closed, the better.

Let those who are so severe in their denunciation against our schools, and pronounce them a failure, in their superior wisdom, point out something better that can be substituted in their place, and it will be gratefully acknowledged and received. It may be deemed a part of wisdom to declaim against existing evils, but it is a far higher gift to devise effective and practical means by which these evils can be removed. Are our schools to be disparaged or condemned for not doing the work which they were not intended to do?

It is not, and it ought not to be, the aim or purpose of our free schools to teach the technicalities or creed of any particular sect or party; but the fundamental truths of morality and virtue and the duties of citizenship may be taught, and these are now taught by our best and most faithful teachers in all our schools. These vital truths do, and ever should, take the highest place in all teaching.

The language of our statutes is: "Every teacher shall aim to implant and cultivate in the minds of all children committed to his care, the precepts of morality and virtue."

Have our colleges yet accomplished all that the friends of education desire, and are they to be pronounced a failure? Are these to be denounced because their work is not perfect and completed? Are our law and medical schools failures, because they do not teach theology? And may not, for the same reason, christianity itself, with all its blessings, be pronounced a failure, because wickedness still abounds, and scoffers and unbelievers increase and grow bold and arrogant?

We assert confidently, from an experience and observation of more than fifty years, that our free schools have accomplished, and are still accomplishing, a great and noble work, and that there has been very great improvement during this period. And they are doing this work in spite of all the obstacles and hindrances they have had to encounter—in spite of the great and

continued influx of ignorance—in spite of the hostility of a few—the indifference of many, and in spite of the captious and carping criticisms of those who are entirely ignorant of their working and the results.

What would New England, with her unfavorable climate and barren soil, have been to-day, had it not been for her free schools? They are and they have been justly esteemed her glory and her pride. What has given New England her exalted position among the nations of the earth? Where is there such intelligence among the masses, such freedom, such social enjoyments? Where has there been such progress in all the arts and inventions that are the refinement and ornament of life? Where has there been such advance in civilization and in the increase of the comforts and even the luxuries of living as in New England? And it is to her free schools, more than to all other means and agencies combined, that she is indebted for these high blessings and privileges.

This is the universal and emphatic testimony of her prominent men and her statesmen, whose noble deeds now adorn her annals. The wisdom of our forefathers in establishing these schools has spread far and wide, making the wilderness and waste places to rejoice.

All history shows conclusively that where the masses have been neglected there has been but little or no advance in civilization.

Had Greece and Rome, the ancient seats of learning,

which carried the cultivation of philosophy and many of the arts to such a state of perfection that the creations of their genius have survived as models in every subsequent age—had these renowned seats of learning the foresight and wisdom to preceive that their perpetuity and glory depended upon the training and culture of their youth ; had they shown the same vigilance and energy which was shown in the culture of philosophy and art, in elevating the whole people to a higher plane of intelligence, they would not now be compelled to recite in mournful strains the sad requiem over their former greatness.

It is not claimed that our schools are yet perfect, or that they are accomplishing all that is desired. Much, very much, needs to be done. The great work has as yet been only partially achieved. But should they be disparaged and undervalued because they are imperfect ? Where is there perfection ? Is the public confidence to be lessened in the great good they are doing because they are not doing everything ? It is much easier to pull down than to build up. Vandalism has, in a short time, destroyed the noblest work of art which the loftiest geniuses have been ages in perfecting.

It is only when the deep conviction of the surpassing greatness of our school work shall pervade every heart that beats in sympathy with human brotherhood and human suffering ; when every parent shall regard it as the richest legacy he can leave his children, to develop

all their mental energies, and to give them the highest culture and training for the duties, responsibilities and enjoyments of life; when every friend of humanity, seeking the highest welfare of all, shall devote his energies to the elevation of the whole people to the highest state of intelligence; when legislators shall not be too timid to enact laws not only for the growth and prosperity of the state, but also to protect it against alarming evils that threaten its very existence; when ignorance shall be regarded, if not as a crime, yet as the fruitful source of many evils; when truants and vagrants shall be no longer seen roaming in our streets—and lastly, when *all* our teachers shall be earnest and faithful, and are thoroughly trained, not only in the theory, but in the art and practice of teaching, and who enter the profession with higher motives than to obtain the means of a temporary livelihood; then we may reasonably hope for schools of a far greater excellence and power.

There have been no important changes in our schools the past term. A large and interested class in mechanical and industrial drawing has been formed in our high school, from which important results are confidently expected. It is evident that pupils, during the last part of their course of instruction, should have an opportunity, as far as possible, to give special attention to those studies that will best fit and prepare them for the vocations they intend to follow when leaving school.

There is now a reasonable prospect that the Grammar school building so long needed in the ninth ward will be completed during the year. The pressing need for additional accommodations in the tenth ward for the Intermediate and Primary schools still continues. As we have registered in all our schools 595 more pupils than were registered the corresponding term last year, we shall need at the beginning of next term two or three more teachers for our Grammar schools, and two or three for our Intermediate and Primary schools than the committee is authorized to appoint. Our schools will suffer seriously without them.

As there has been less sickness, and as the weather has been favorable, the attendance has been more regular than in former years.

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“There is no subject of special interest to be discussed at the present time. The schools are in their usual satisfactory condition. The teachers, generally, have been earnest, faithful and successful in their work. There is, however, a marked difference between our best and our poorest schools. This difference is to be ascribed to various causes; some of which it is very difficult to remove. It is unquestionably true, that under favorable circumstances the teacher gives character to a school. Without a skillful teacher eminently fitted for his arduous duties, who feels his responsibility and has life and energy, and is ever seeking to improve his methods and to perfect his work, there are no other



means or agencies by which a school can be brought to a high degree of excellence. It is therefore the bounden and imperative duty of parents and all the friends of humanity to provide the very best possible instruction and moral training for the young.

It is unquestionably true that the literary qualifications of a teacher should be of a very high order, but there are other qualifications that are often overlooked which are equally necessary to success. There is no trade or profession in which mere theoretical skill will enable one to produce the most perfect results. This is now universally admitted and practiced by those who hope to succeed in their various undertakings.

Our public schools are established to educate, in the very best possible manner, all the youth of the city, that they may become useful citizens and may make the most of life in discharging all its duties and in participating in all its comforts and enjoyments. To accomplish a work so vast and so momentous in all its future results, the very best teachers, and no others, should be selected. The sad consequences of a neglected or a defective education can, only in part, be removed in after life. The blighting influence will be seen and felt in every child.

Our schools would be very much improved, and their efficiency increased by more frequent visits of parents and committees. Few are aware of the very great value of these visits to our schools. Teachers need the

encouragement and sympathy of parents in their arduous and responsible work. None but those who are familiar by personal observation of the trials, the difficulties and exhausting labor of the school-room, can form a just and correct conception of what our faithful teachers are required to do. Their work, to be duly appreciated, must be examined in all its details. There is no situation more responsible, none in which all the Christian virtues are more frequently called into exercise than in the training and the culture of the young. Let parents visit our schools more frequently, and they would be less inclined to find fault and to exaggerate mistakes that are sometimes made. Is it reasonable to expect that teachers with a limited experience, having the charge of fifty pupils and sometimes more, should never make any mistakes in discipline or in modes of teaching? To remedy these mistakes when they occur, which teachers would very cheerfully and gladly do, parents must coöperate with them, in full sympathy with their trials, carefully watching the progress of their children, and from time to time making such suggestions as may be deemed advisable. In cases of serious complaints, great caution is needed that no final judgment be rendered till there has been a thorough examination of both sides. Teachers are sometimes unjustly condemned on partial and one-sided accusations, when they have had no opportunity to defend themselves from misstatements.

There never has been a period in the history of our schools when there was needed for their successful management and supervision more wisdom and enlarged experience than the present. The present age is a progressive one, and there should be continued advancement and progress in our schools as well as in every other art and profession. But we should not, without due consideration, confound progress with radicalism. Whatever is fundamental and has been established by long and large experience should not be cast aside for novelties and new theories, however specious they may appear, or however eloquently they may be advocated. That there are serious and grave questions involved in our system of public schools, all must admit. To solve these wisely there is needed the profound wisdom of the ablest minds and a deep sympathy in the welfare of the young.

An honest difference of opinion in regard to methods of instruction and management may and often do exist. These should be carefully and wisely considered. Teachers and parents often disagree in regard to the relative value and importance of particular studies. Some would give prominence to one study and some to another. It is certainly the part of wisdom always to adapt the instruction to the age and capacity of the pupils. Ambitious teachers sometimes err, in their zeal to show what can be done, in attempting to teach very young children what they would readily learn in half

the time, and would more clearly understand in classes of a higher grade. When this is done it is always at a great sacrifice of valuable time and a neglect of other studies, equally, if not more important and better suited to the capacity of the pupils.

Were parents in the habit of visiting the schools more frequently, and noticing the progress of their children, and conferring more freely and confidently with the committee and superintendent, the mistakes that are sometimes made by inexperienced teachers would be corrected at once.

In our graded and classed schools it is often very difficult to arrange the pupils that all in the same class shall be of equal attainments and capacity, so that not unfrequently, without the watchful care of parents, bright scholars will be detained in a class when they ought to be promoted to a higher. And sometimes pupils that have been absent on account of sickness or other causes, or are urged on by the ambition of parents, are hurried over studies they do not understand. Whenever these mistakes occur they are, if known, promptly corrected ; but a knowledge of these facts must come to the Superintendent through the parents.

It is also equally true that when parents are deeply interested in the welfare of the schools and make frequent visits, that corporal punishment is seldom necessary.

It is, perhaps, needless for me to refer again to the

fact that our schools are still suffering severely from truancy and absenteeism. None but those who go from school to school can form a correct judgment of the magnitude of this increasing evil. It is not uncommon to find on a pleasant day a dozen boys or more of school age engaged in their sports, in sight of the school. These things certainly ought not so to be. Those who are still unconvinced of the great increase of youthful crime and of the imperative necessity of some practical law to check it, I would earnestly recommend to examine the late report of the Chief of Police. In his report, he says: "The arrest of minors for various crimes and misdemeanors in the aggregate amounted to 1,117 persons, or more than fourteen per cent. of the total number of arrests for the entire year." It may also be added that very many of the unfortunate inmates of the State Farm come from this long neglected class.

The continued demand for school accommodations must always, of necessity, correspond to the increase in the number of pupils. This increase has, during the past year, been very large, especially in the First and Tenth Wards. We have registered this term 649 more pupils than were registered the corresponding term last year. With the two or three exceptions, where it is impossible to make any changes on account of the location, our schools are crowded, and in some instances to excess. There is a very urgent and pressing need of a new school house for Intermediate and Primary

scholars in the Tenth Ward, in the neighborhood of Chalkstone avenue. There will also be needed very soon a new Intermediate and Primary school house very near Camp street. The rooms now occupied in the Benefit street house by the deaf and dumb will very soon be needed. The whole number of pupils registered in all our schools the past term is 12,874.

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"This is the one hundred and eighth quarterly report that I have had the honor of submitting since my connection with the schools of Providence.

During this long period of more than twenty-seven years, there have been very great and important changes, not only in the city, but in our schools.

The population of the city of Providence, in June, 1855, was 47,785, it is now very nearly 112,000. There were in 1855, forty-seven schools with 113 teachers and 6,620 pupils. There are now eighty-five schools with 283 teachers and 12,874 pupils.

During this same period, twenty-four school houses have been erected; one for the High school, seven large brick houses for the Grammar schools, six houses of brick and eight of wood for the Intermediate and Primary schools.

There has also been an almost entire change in our school system. All but two or three of the old houses have been remodeled. The large rooms for two or three teachers have been divided into smaller rooms for one teacher in a room. This system introduced into

Providence has been almost universally adopted through the country. There has also been very great improvements in providing for the comfort and health of the pupils, especially in the improved ventilation in the new houses, and in substituting single desks for double ones. It will be apparent to all, who will examine for themselves, that the course of studies has been largely extended, and that the percentage of correct answers in the examinations has gradually increased. If the test of qualifications twenty-five years ago for admission to the High school, and the questions then submitted were adopted now, nearly all the pupils in the second classes of our Grammar schools would obtain the required percentage for admission.

In previous reports very many of the subjects intimately connected with the advancement and the proficiency of our schools have been briefly discussed. There are a few of such vital importance that they should be often repeated that they be not overlooked or undervalued. It is emphatically true that our schools will ever embody the public sentiment in regard to their true value. Where there is indifference or apathy or neglect, the highest degree of excellence and efficiency cannot be attained.

Our ablest statesmen and patriots in every age, in their maturity of wisdom, have enjoined upon the future generations as their dying legacy that there can be no security or perpetuity as a free government, no progress

in modern civilization, without the intellectual and moral forces that are developed in our youth through the agency of our schools. And history and observation fully confirm this divine truth. To undertake and carry forward this great work requires minds of profound wisdom and the deepest sympathy.

There should be but one single aim and purpose to secure the noblest results. No party strife or personal considerations or sectarian influence of any kind should have the least weight in deciding the momentous questions that relate to the highest welfare of our schools. It is evident that we must have, to carry on this great and important work, not only men with enlarged wisdom and experience and free from all undue bias, but skillful and thoroughly educated teachers, who honor the profession and who are honored by those for whom they devote their lives and best energies.

There is no position in life where personal influence can be exerted with greater power or with more permanent results than that of the office of a teacher. The future of many a youth is fixed and determined by the moulding influence of his tender years.

While there should be continued progress and improvement in methods of instruction, based on experience, there should be no experimenting with youthful minds. The advice of vain theorists, without experience, should be received with great caution.

The first and highest aim of every teacher should be



to lay the foundation of a pure and noble character. This should constitute an important part of his daily work. Truth and duty cannot be separated in any true education. Knowledge, to have any permanent value, must be wrought into character and form one of its essential elements. This is the only possession that survives man's transient being. Every other possession, whether of wealth or fame or of any other name, is fleeting, always subject to continual fluctuations and disappointments, but character, pure and noble, however humble may be its possessor, bearing the impress of its divine original, is as unfailing as eternal truth.

But education is not, and should not, be confined to teachers alone. Parents have the deepest interest in this great work, and there should always be active co-operation and sympathy with teachers. But few are aware how much the success of our schools depend upon it. Teachers need it. They are encouraged and sustained by it.

Were parents in the habit of visiting our schools more frequently, and carefully noticing the school work and the trials of the teachers, they would be less inclined to criticise or exaggerate the mistakes and faults that are sometimes committed; and whenever serious errors in discipline or teaching do occur, they should not be passed over in silence, but parents should be free to communicate them to those whose duty it is to make the correction. Much injury is frequently done to our

schools, and great injustice to our teachers, by one-sided statements and half truths. It is expected that mistakes and errors will sometimes occur, and it is important that they be corrected at the time, but this should always be done in the most quiet manner and with the least possible publicity.

To complete the course of study in our Grammar schools four years are now required, and every pupil, unless compelled to be absent from sickness or other necessary causes, should be allowed to finish it in that time. Some pupils can by extra effort—and they should be encouraged—finish it in less time.

The standard of qualification for admission to the High school, especially for the classical department, should be so changed that pupils can enter at an earlier age. Pupils intending to enter college should begin their preparation certainly as early as thirteen or fourteen years of age. There is also an increasing demand for the establishment of a partial course of study in the High school for those pupils who wish to spend only one or two years after leaving the Grammar schools.

When boys arrive at the age of fifteen or sixteen years, and have chosen their future vocation, and have but a short time to spend in school, they should have the opportunity, if possible, to devote themselves especially to those branches of study that will best fit them for their future occupation. This can be very easily accomplished by making the studies in the High

school, for a limited number, elective. I am firmly convinced that such an arrangement would be in accordance with the earnest wishes of many parents, and would more widely extend the benefits and privileges of our schools to all classes. The regular course of studies in the High school need not be materially changed for those who wish to complete it and to receive a diploma; but there are often a few whose age and circumstances oblige them to leave school before they have reached, in the regular course, those studies which will be of the greatest practical value to them. It is emphatically true that the privileges of our schools should be extended, as far as possible, to all classes. It is not the higher education of a few, but the practical education of the masses, that the wisdom of statesmen and the sympathy of humanity demand.

The examinations of the different grades of schools, with very few exceptions, have been very satisfactory. A larger number than usual (about two hundred and sixty) have graduated from our Grammar schools. The results of the examinations for the High school show a higher percentage of correct answers than in any previous year. The average per cent. of all the schools in all the studies is over ninety. The average in spelling in all the schools, is over ninety-five per cent. These written examinations in all the studies in the Grammar schools, covering more than six reams of paper, are a faithful and impartial test of the results of the work in our schools. Parents and committees, and all who are

interested in the welfare of our schools, are cordially invited to examine for themselves.

The number of pupils that have been registered in all our schools the past term is 12,874, exactly the same number that were registered the last term. The additions to the Primary schools are just equal to the number that left the other grades.

The whole number of different pupils that have been registered during the year is more than fourteen thousand, and there are considerably more than one thousand of proper school age that are not attending any school. How long shall this increasing evil continue to exist? Is there any form of suffering in society that ought to awaken and move human sympathy more than this? Is there, can there be, a greater cruelty than to deprive unfortunate children of their birthright?

There has been a large increase in the number of pupils during the year. We have registered this term seven hundred more than in the corresponding term last year. If the number of pupils continues to increase more accommodation and teachers will be needed during the year.

We have admitted the past term into the High school 450 ; into eleven Grammar schools, 3,616 ; into thirty-five Intermediate, 3,138, and 5,670 into thirty-eight Primary schools.

Respectfully submitted,

DANIEL LEACH,

*Superintendent of Public Schools.*

## REPORT ON EVENING SCHOOLS.

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*To the School Committee of the City of Providence :*

The Standing Committee on Evening Schools present their annual report for the year 1881-82.

Pursuant to a vote of the general Committee and by authority of the City Council, your Committee, on the evening of Monday, October 24th, opened nine evening schools at the following places, viz.: in the school houses on Elm, Wickenden, Meeting, West River, Orms and Oxford streets, in the chapels on Harrison and America streets, and in Unity Hall, Olneyville.

The several schools were located in the same places as last year, with the exception of the Wickenden street, which was held in the old Baptist church now owned by the city.

Your Committee selected with care, one hundred and twenty-three teachers, most of whom had had several terms experience in our evening schools, and they were duly appointed by the Committee on Qualifications. A

few temporary teachers were appointed for the opening of the schools, but these, with such of the regular appointees as ceased to be needed as the term progressed and the attendance fell off, were discharged. The schools closed on the evening of February 18th, 1882, after a session of seventeen weeks, with one hundred and four teachers.

The whole number of scholars registered was 2,098; of these 1,506 were boys and 592 girls. It will be seen upon examination that the average attendance was not quite as large as in the next preceding year, it being forty per cent. against forty-two per cent. of that year.

The entire cost of the schools was \$11,504.62, distributed as follows, viz.: salaries of teachers, \$9,458.00; janitors, \$408.00; rents, \$775.00; gas, \$415.26; fuel, \$199.46.

From the reports of the several principals and from the information gained from frequent visits to the different schools, your Committee believe that the discipline and order of these schools with a very few exceptions will take rank with those of previous winters.

Your Committee recommend that application be made to the City Council for the establishment of nine ordinary evening schools of twenty weeks for the coming winter.

Soon after the schools were opened for the winter, one of our associates, Mr. Sparrow H. Nickerson, was

suddenly removed by death. He was a man of upright character, of a genial disposition and his presence was always as welcome as it was dignified. He met with the Committee and assisted in the selection of the teachers, and was assigned the special care of the Oxford street school and saw it well underway. He was a firm friend of the evening schools, visited them frequently, and labored hard for their advancement. His sudden death is a loss to the cause of free public education.

All of which is respectfully submitted for the Committee.

F. COGGESHALL, *Chairman.*

FRED I. MARCY,

JOHN W. CASE,

JOSEPH E. C. FARNHAM,

EMULUS RHODES,

GILBERT E. WHITTEMORE,

FREEBORN COGGESHALL,

*Evening School Committee.*

# WRITTEN EXAMINATIONS.

## HIGH SCHOOL.

### CLASSICAL DEPARTMENT.\*

#### GREEK.

##### I.

1. Define hiatus and explain the three ways of avoiding it.  
Explain the illustrations of avoidance of hiatus in Xen. Anabasis I., VI., 7.
2. Explain the two kinds of protraction.  
Explain three instances in the above passage.
3. Define contraction and explain three instances in the above passage, including ἐδύνω.
4. Name the proclitics. Give the enclitics in Xen. Anabasis, I. VI., 7-8.

##### II.

Xen. Anabasis, Book II., Chap. V.

1. Comparison of:—32-1, ὕστερον. 35-3, πιστότατοι. 38-1 μεγάλη. 39-5, φίλους, ἐχθρούς?
2. Inflection of:—32-4, ᾧτινι. 33-5, χερσίν. 38-67, ἐαυτοῖ  
Principal parts of:—32-2, συνελαμβάνοντο. 32-4, ἐντυγχάνουσιν

\*Specimens of examinations given during the school year, 1881-82.



3. Synopsis of:—33-3, ἡμπεγνόουν. 34-2, ἐκπεπληγμένοι.  
39-1, ἀπεκρίναντο. 41-1, εἶπε. 41-3, (ἀπ)όλλυσθαι?  
4. Inflection of:—38-6, ἀπαιτεῖ. 39-7, ὤμνυτο. 41-5,  
πέμψατε?

Name the tense systems of the Greek verb.

### III.

1. Give endings for historical tenses in the active voice.  
Give endings for principal tenses in the middle voice.
2. Give the exceptions to recessive accent in the active voice of the finite verb.
3. When does ἔστιν have recessive accent?  
When does αὐτός mean *self*?
4. 41-5, Synopsis of ἴσθαι?  
48-6, Synopsis of παρίεναι?
5. 41-6, λάβωμεν, explain formation of present from stem.  
49-2, βάλλουσι, explain formation of present from stem.
6. 46-1, παρελαύνων, explain formation of future from stem.
7. Explain formation of:—44-2, πορείαν. 46-4, ἀμαχεί.  
46-5, λοιπὴν. 48-2, τάξεως. 49-3, ἠνέγκασαν?
8. Inflect:—42-1, δίδωμι. 45-3, ἐαυτῷ (in this gender).  
46-4, γυναῖκα.

(Above references to Xen. Anab. Book III., Chap. IV.)

### IV.

1. Translate at sight Xen. Anab. VI., V., 15-18.
2. Location and construction of ἴωμεν, ἀπίωμεν, θεῶσθαι, μεταβαλλομένους, ἐποίμην.
3. Principal parts of ἐπιστάμεθα, ἐφάπεσθαι; synopsis of ἴστε.
4. Give the next form of ἴωμεν, ἴστε, οὐδενὶ. ἔοικε, ἡμίσεσιν, ἐποίμην, ἡμῶν, ἀποχωροίην, οἶδ', ἀπιδόντων, ἐπιστάμεθα.
5. Give the endings of ἴωμεν, ἔφονται, ὁρᾷτε. ἰέναι, θεῶσθαι; give the verb stem of ἔστιν, ἀπελθεῖν, ἔφονται, μεταβαλλομένους, ἴστε.

6. What cases does *σύν*, *ἀπὸ*, *ἐπὶ* govern; what other form for *οὕτως*, *οὐκ*; compare *χρεῖττον*, *ἥδιον*.

## V.

1. Translate at sight Xen. Anab. VII, I, 2-5.

2. Change the following verbs to direct discourse: *ποιῆσεν διαβαῖεν*, *ἰσέσθαι*, *ἀπαλλᾶξοιτο*, *βούλοιτο*.

3. Location and construction of *στρατεύεται*, *ὦν*, *δεαβαῖεν ἀπαγγελεῖν*, *βούλοιτο*.

4. Give the present stem and verb stem of *ἔτυχεν*, *ὑπισχνεῖτο διαβαῖεν*, *ἀπαλλᾶξοιτο*, *ἀποπλεῖν*.

5. Composition and derivation of *αὐτοῦ*, *στράτευμα*, *ναύαρχον λοχαγούς*, *μυθοφορὰν*.

6. Principal parts of *δέοι*; inflect *ἔφασαν*.

## VI.

1. Translate at sight Homer's Iliad III, 225-242.

2. Give the Attic prose forms for *μιν*, *ἡγερέθονται*, *ξείνισσεν*, *κεν*, *οὔνομα*, *δοιῶ*, *τῷ*, *γείνατο*, *νέεσσ'*, *δειδιότες*.

3. Composition and derivation of *ἔξοχος*, *ἀρηίφιλος*, *ἐλίχωνας κοσμήτορε*, *ποντοπόροισιν*.

4. Give the next form of *Αἴας*, *ἔστηχ'*, *ἵκοιτο*, *ὄρω*, *λαῶν μήτηρ*, *ἐθέλουσι*, *καταδύμεναι*, *αἴσχεα*, *διιδιότες*.

5. Scan line 230 and explain the quantity of *ο* in *θεός*; scan line 236 and explain the quantity of *αι* in *δύναμαι*.

## GREEK COMPOSITION.

## I.

When the station was near, where the army was about to break ranks, Pategyas, a Persian faithful to Cyrus, appeared in the front. He was riding at full speed and his horse was in a great sweat. He shouts to all whom he meets, that a large army is approaching, prepared for battle.

Cyrus at once leaped down from his chariot with great haste and mounted his horse. All the others armed themselves fully and took their stand, each in his own place. Cyrus ordered Clearchus to hold the right wing, Proxenus took his position next, the left was held by Menon and his division.

## II.

The generals were thus taken, and, having been brought to the king, were beheaded. One of them, Clearchus, was confessedly a man both warlike and exceedingly fond of war.

In the first place he made war with the Lacedaemonians against the Athenians; then he persuaded his state that the Thracians were wronging the Greeks, and made war upon them.

Being disobedient to the ephors, he was condemned to death; but he fled and came to Cyrus, who gave him ten thousand darics. With this money he collects an army, and continues to ravage and plunder until Cyrus wants the army.

## III.

On the eighth day the guide was given to Cheirisophus. Episthenes, the Amphipolitan, guards the son of the village-chief in order that the guide may not go away. If the man guides well, he will go away with his son. Cheirisophus said that he did not lead into villages. But the guide was angry because Cheirisophus struck him and there were no villages in the region. He ran away during the night and left his son. If Cheirisophus had bound him, the ill-treatment of the guide would not have been a ground of difference to Xenophon and Cheirisophus. The boy loved Episthenes and was most faithful to him. They will march seven days journey along side of the Phasis river. The Taochians and Phasianians held the pass into the plain.

## IV.

Neon says that I, deceiving you, will lead you to Phasis. If I am doing wrong let me suffer punishment before I go away. We know

where the sun rises and where it sets. If one goes towards the west, he will come into Greece. Go to the east, if you wish to come among the barbarians. Am I able to deceive you in this? The south wind does not blow out of the Pontus into Greece. Will you embark when the south wind blows? You will sail in one hundred ships, but I in one. How should I lead you not wishing! But you will be deceived and will come to Phasis. You will not know that Phasis is not Greece. I, one man, will not suffer punishment, thus planning concerning myself and you.

## V.

If on the next day they had not sacrificed, they would not, after having breakfasted, have made their companies in column and arranged the barbarians on the left in the same manner. Whenever they marched thus, they had the bowmen between the companies. The Greeks said that the well-girdled of the enemy would run down, if they threw stones. The barbarians had drawn up their men opposite at the place, where they turned the Greeks on the previous day. If they receive the peltasts and fight, the hoplites will draw nearer. The enemy turned and the peltasts followed in order that they might pursue them up to the city. The enemy had spears, long, thick, which they carried with difficulty, and they were defending themselves with these in close combat. If the Greeks had cowered down, the barbarians had not fled. But they all left the place and the king in the tower; for he said that since the place was taken he wished to be burned with the towers.

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LATIN.

## I.

1. Give general rules for gender.
2. Give stem endings and genitive endings in the five declensions.
3. Inflect *deus*, *dea*, *magister*, *gener*.

4. Give case endings for masculine, feminine, and neuter nouns of the second declension.

5. Inflect *buris*, *clavis*, *amnis*.

## II.

Cæsar De Bello Gallico, p. 51 :

1. Locate the following forms, giving construction and rule :—12, *classem* ; 13, *hostibus* ; 17, *quibus* ; 24, *falces* ; 32, *eo*.

2. Give principal parts of :—15, *profectæ* ; 19, *cognoverant* ; 23, *acciderent* ; 27, *praerumpebantur* ; 34, *latere*.

3. Explain the mood of :—18, *agerent* ; 22, *possent* ; 26, *comprehensi erant* ; 29, *consisteret* ; 33, *gerebatur*.

4. Explain the tense of :—10, *sumi* ; 11–12, *expectandam* ; 18–19, *insisterent* ; 36, *tenebantur*.

Compare,—21, *inferiore*.

## III.

First oration of Cicero against Catiline.

1. Compare :—10–19, *diligenter* ; 10–4, *multo* ; 10–30, *majorum*. Give the etymology of :—10–31, *perniciosas* ; 11–16, *parricida*.

2. Give construction of :—10–21, *vita* ; 10–31, *leges* ; 11–5, *inertiae* ; 11–10, *factu* ; 11–18, *animo*.

3. Inflect :—10–22, *Tulli* ; 10–35, *refers*. Give principal parts of,—10–31, *multarunt*. What peculiarity in this form? Inflect,—11–12, *vivendum*. Give the form and meaning in the other number of :—10–24, *castra* ; 10–35, *gratiam*.

4. Explain in mood and tense of :—10–22, *loquatur* ; 11–7, *conflagraturum*.

Write in Latin :—If I had judged . . . I would not give. If it had overhung me . . . I would have thought.

Explain the mood of,—11–29, *fateatur*.

## IV.

Translate :

His rebus confectis, in Aeduos proficiscitur ; civitatem recipit. Eo.

legati ab Arvernīs missi, quae imperaret se facturos pollicentur. Imperat magnum numerum obsidum. Legiones in hiberna mittit. Captivorum circiter viginti millia Aeduis Arvernisque reddit. Titum Labienum duabus cum legionibus et equitatu in Sequanos proficisci jubet : huic Marcum Sempronium attribuit : Gaium Fabium et Lucium Minucium cum legionibus duabus in Remis collocat, ne quam ab finitimis Bellovacis calamitatem accipiant. Ipse Bibracte hiemare constituit. His rebus litteris Caesaris cognitīs, Romae dierum viginti supplicatio indicitur.

Give principal parts of *pollicentur*, *indicitur*.

Give synopsis of *proficiscitur*, *imperaret*, *accipiant*.

Give case and construction of *T. Labienum*, *G. Fabium*, *litteris*, *Romae*.

## V.

Translate :

Haec atque alia hujusce modi saepius dicendo, Memmius populo persuadet uti L. Cassius, qui tum praetor erat, ad Jugurtham mitteretur, eumque interposita fide publica Roman duceret, quo facilius indicio regis Scauri et reliquorum delicta patefierent.

Dum haec Romae geruntur, qui in Numidia, relictī a Bestia, exercitui praeerant, secuti morem imperatoris sui, plurima et flagitiosissima facinora fecere.

Give principal parts of *persuadet*, *interposita*, *relictī*.

Give construction of *populo*, *Bestia*, *secuti*.

Compare *facilius*, *plurima*.

Explain mood of *mitteretur*, tense of *patefierent*.

## VI.

Translate :

Adhuc, C. Caesar, Q. Ligarius omni culpa vacat. Domo est egressus non modo nullum ad bellum, sed ne ad minimam quidem suspensionem belli ; legatus in pace profectus in provincia pacatissima ita se gessit, at ei pacem esse expediret. Profectio certe animum tuum non

debet offendere. Num igitur remansio? Multo minus; nam profectio voluntatem habuit non turpem, remansio necessitatem etiam honestam. Ergo haec duo tempora carent crimine; unum, quum est legatus profectus, alterum, quum efflagitatus a provincia praepositus Africae est.

Give principal parts of *egressus, profectus, debet, carent, praepositus*.

Give the construction of *Domo, remansio, crimine*.

Give the etymology of *egressus, profectio*.

#### VII.

1. Translate at sight Cicero, "In Antonium Oratio Prima," I., lines 1-13.

2. Give the derivation of *profectio, dejiciebam, fundamenta, discordiis, oblivio*.

3. Construction of *sperarem, mihi, quo before tum, sedandis, delendam*.

4. Synopsis of *dejiciebam*.

5. Gen. plu. of *templum, pacis, civitas*; compare *vetus*; principal parts of *censui, manendum*; gender of *Tellus*.

#### VIII.

1. Translate at sight Cicero, "Pro Quinto Ligario Oratio ad Caesarem," XII., 12 lines.

2. Give the construction of *posses, fuerit futurus, noverit, eorum, dissenserit*.

3. Write the present and perfect stems of *perspicere, posses, noverit, abreptus est, sentiat*.

4. Mark the quantity of the final syllables in the clause "qui — voluisti."

5. Give the stems of *fratres, omnes, quis, horum, sententias, sequerentur, similis, esse, bellum, tu*.

6. Change to direct discourse Cæsar's *Bello Gallico* I., 13.

#### IX.

1. Translate at sight Ovid's *Metamorphoses*, VIII., 337-354.

2. Give the abl. sing. and gen. plu. of *aper*, *hostes*, *ignes*, *nemus*, *canes*.
3. Construction of *nubibus*, *vibrantia*, *furēti*, *ictu*, *trunco*, *mittentis*, *viribus*, *usa foret*, *precibus*, *jaculo*.
4. Synopsis of it, *ictus est*.
5. Gender of *ignis*, *precibus* ; compare *primum*, *proxima* ; derivation of *contingere*, *annuit*, *acumine*.

## X.

1. Translate at sight Virgil's *Æneid*, IX., 234–250.
2. Explain the derivation of *insidiis*, *conspeimus*, *numine*, *interrupti*, *Æneadæ*.
3. Write the first ten verbs in indirect discourse depending upon a past tense.
4. Decline *di* ; give in full affore.
5. Explain the quantity of the last syllable of the first ten lines.

## LATIN COMPOSITION.

## I.

On the approach of Cæsar, ambassadors were sent to him by Ariovistus. The fifth day was appointed for a conference. In the meantime ambassadors were frequently sent back and forth between them. Ariovistus feared lest he should be surrounded, and said that he would come with cavalry and in no other way. Cæsar did not wish the conference to be broken off. Therefore he placed the soldiers of the tenth legion in the herse of the Gauls, and led them to the conference. In this legion he had always had the greatest possible confidence.

## II.

The city of Rome was founded and held in the beginning by fugitive Trojans and Aborigines. The leader of the Trojans was *Æneas*. The Aborigines were a rude race of men who had neither laws nor government.



These were of different race, of dissimilar speech ; they lived one in one way, another in another, but they easily coalesced. After they came together their state was increased in men, in morals and in territory.

When they were assailed in war by the neighboring kings and peoples, their friends were smitten with fear and kept aloof from the danger. But the Romans were active at home and in the field, and repelled the dangers by their own valor. They gave assistance rather than received it, and so secured for themselves friendship.

### III.

The testimony of the Allobroges and of T. Volturcius was confirmed and rewards were decreed them by the senate. While these things were being done, the artisans and slaves in the villages were aroused by the freedmen of Lentulus and Cethegus, for the purpose of rescuing them. Some of their clients at the same time endeavored to break in to them with weapons.

These things being learned by the consul, he disposed guards and called together the senate. He asked D. Julius Silanus, who was then consul elect, his opinion concerning those of the conspirators who had been captured, and concerning the rest, if they should be captured. He gave it as his opinion that punishment should be inflicted upon them. But afterwards the speech of C. Cæsar moved him to a different opinion.

### IV.

The letters which had been given by each were brought forward. The seal was first shown to Cethegus and was recognized by him. The consul then cut the string and read. Cethegus had a little while before begun to say something concerning the swords that had been found at his house, but upon the reading of the letters he became silent.

The seal of Lentulus was the likeness of his grandfather. Cicero

said that this, even though silent, ought to have called him back from so great a crime. After the letters had been read an opportunity of speaking was given him by the consul, but he refused.

The whole testimony had now been set forth and taken down. when suddenly Lentulus raises and inquires of the Gauls what he has to do with them, and why they came to his house. They reply briefly, and inquire of him whether he has said nothing to them concerning the Sibylline fates. Then, cast down by the force of conscience, he confessed.

#### V.

Why am I so much delighted with Archias ! Do you think that I am able to speak on so great a variety of subjects unless I cultivate my mind with learning ? How could my mind bear such tension unless it were relaxed by the same learning ! I have devoted myself to these pursuits. Are you not ashamed that you are able to bring nothing from them to the common good ? Neither my ease, nor pleasure, nor sleep has called me away from the time or service of any one, yet I have consumed much of my time in cultivating these pursuits. You ought to blame those who give so much time to unseasonable banquets, to the gambling table and the ball. I perceive from what fountain my power and my oration grows. Nothing in this life ought to be sought except glory and honor. In obtaining these, all pangs of body and perils of death you should consider of small account.

#### VI.

Did they all turn their faces and eyes upon me because they saw that I was anxious concerning the peril of the republic ? Your good will towards me would not be pleasing in my woes, if I was forgetful of your safety. He said that the immortal gods had forgotten the republic, which was enduring all pangs and tortures. Cicero bore all cruelties freely in order that he might give safety to the Roman peo-

ple. It cannot be denied that the forum is never free from the peril of death. Whether the forum or the senate-house contains all equity is uncertain. May the immortal gods wish that my consulship have such an end that I may take this most beautiful country from the most foul flame. Do you not think that the Roman people ought to be taken from the most wretched slaughter? When the prophets had induced P. Lentulus to think that his name had been fated for the destruction of the republic, I rejoiced that the consulship of the Roman people had been given to me.

## VII.

The heavy wound is nourished by the veins of the queen and the hidden fire consumes her. If the countenance and words of the hero did not recur to her mind, care would give calm rest to her limbs. When the damp shade was removed from the earth by Aurora and the lamb of Phoebus, Dido addressed her affectionate sister. She said that dreams of Æneas disturbed her and that she believed that the new guest who had come to her dwelling was of brave heart and arms. When she had confessed to her sister her love, she spoke as follows: "Has not Æneas moved my mind? Yet though I recognize the traces of the ancient flame, let the earth open for me if I ever forget Sychæus. You know that he has my love with him and keeps it in the grave. It remains fixed in my mind that I do not wish to unite in the marriage bond with any one."

## ALGEBRA.

## I.

1. Define involution, evolution, a power, a root.

Write the sixth power of  $x + y$ .

2. Write the third and fourth powers of:  $-5a^3b^{\frac{1}{2}}c^{-2}$ ;  $\sqrt[5]{a^5}$ ;  $\sqrt[6]{a^6}$ ;  $\sqrt[5]{-a^5}$ ;  $\sqrt[6]{-a^6}$ .

3. Extract the square root of 7284601, explaining in terms of  $t$  and  $u$ .

4. Extract the cube root of 12326391.

## II.

1. Define a radical. When are radicals similar? What is reduction of radicals? When is a radical in its simplest form? Upon what principle does the multiplication of radicals depend?

2. Reduce to their simplest forms:  $\sqrt[3]{7290 x^3 y^{6a+2}}$ ;  $\sqrt[5]{96 a^7 x^9}$ ;  $\sqrt{a^{m+1} b^n}$ ;  $\sqrt{(a^2-b^2)(a+b)}$ ;  $\sqrt{\frac{3}{4}}$ .

3. Perform the following examples:  $\sqrt{a^2 y} + \sqrt{c^2 y}$ ;  $\sqrt[3]{16 a^3 b} + \sqrt{4 a^2 b} - \sqrt{a^2 b} - \sqrt[3]{54 a^3 b}$ ;  $\sqrt{2 a^2 x y} + \sqrt{2 b^2 x y}$ .

4.  $(\sqrt{a} + \sqrt{c}) \times (\sqrt{a} + \sqrt{c})$ ;

$(x + \sqrt{y}) \times (x - \sqrt{y})$ ;  $3 \sqrt{2a} \times 2 \sqrt[3]{3a}$ ;

$$4a \sqrt{\frac{3a^2}{8b}} \times \frac{1}{2} a \sqrt{\frac{3}{2b}}.$$

## III.

1. A man bought a number of horses for \$240. If he had obtained three more for the same money, each horse would have cost \$4 less. Required the number of horses.

2. The product of two numbers is 77, and the difference of their squares is to the square of their difference as 9 to 2. What are the numbers?

3. Given:  $m : n : o : p$ . From this write a proportion by alternation, by inversion, by composition, by division.

Write any continued proportion of at least four ratios.

4. Prove Theorem VI: If four quantities are in proportion, they will be in proportion by composition.

Prove Theorem XII: When four quantities are in proportion, if

the first and third be multiplied or divided by the same quantity, as also the second and fourth, the resulting quantities will be proportional.

## IV.

1. Define a series. What five elements in an arithmetical progression? Define geometrical progression.
2. Demonstrate the formula for the last term of an A. P., for the sum of a G. P.
3. A man traveled  $\frac{1}{2}$  mile the first day of February, 1882, 1 mile the second day,  $1\frac{1}{2}$  miles the third day, and so on throughout the month, stopping only on Sundays. How many miles did he travel?
4. The first term of a G. P. is 28, the last term is 17500, the sum of the terms is 21868. Required the ratio.

## GEOMETRY.

1. Define Geometry, a trapezium, proportion by inversion, the area of a surface, and similar polygons.
2. If a straight line cut two other straight lines, making the sum of the interior angles on the same side equal to two right angles, the two lines will be parallel.
3. In equal circles, sectors are proportional to their arcs. Prove it.
4. Given the area of a regular inscribed and of a regular circumscribed polygon, to find the area of a circumscribed polygon of double the number of sides.
5. Construct the greatest possible equilateral triangle whose sides shall pass through three points not in the same straight line.
6. Show that the three altitudes of a triangle meet at a common point.

## FRENCH.

## I.

1. Translate at sight : L'antiquité n'offre pas de plus bel exemple de dévouement patriotique, que celui d'Arnold de Winkelried, le héros suisse, du canton d'Unterwald. A la bataille de Sempach, (1386) qui décida du sort de la Suisse, les phalanges ennemies ne pouvaient être entamées : elles opposaient à l'impétuosité des Suisses une résistance opiniâtre qui rendait tous leurs efforts inutiles. Winkelried entendit dans son cœur le cri de la patrie ? " Camarades," dit-il, " je vais vous faire un chemin : chers compatriotes, souvenez-vous de mon nom et de mes enfants." Sûr de trouver la mort, il se précipite au milieu d'une forêt de lances ; il en embrasse le plus qu'il peut, et tombe à l'instant percé de mille coups. Mais il avait fait une trouée dans les bataillons ennemis. Les Suisses enflammés par l'exemple de ce héros, s'y jettent avec fureur. La mort vole devant eux ; partout ils portent le désordre et la confusion ; la déroute des ennemis devient générale. Winkelried sauva sa patrie ; aussi son nom est-il encore aujourd'hui prononcé en Suisse avec respect et reconnaissance.

2. Give the principal parts and synopsis of *offre*.
3. Inflect the present and imperfect subjunctive of *entendit*.
4. Inflect the present indicative and preterite of *faire*.
5. Write the date 1386 ; give the plural of *de plus bel exemple*, *celui*, *le héros suisse*, *dans son cœur*.
6. Give the fem. plu. of *pareil*, *bref*, *heureux*, *complet*, *sec*, *public*, *doux*, *malin*, *frais*, *mon*.
7. Translate into French : If Servilius had caused to sound the retreat, of what would they have accused him ?  
The tribunes of the people would have accused him of understanding with the enemy.

## II.

1. Translate : Si vos ennemis se sont ralliés, s'ils ont été soutenus par un corps de troupes qui s'avavançait à leur secours ; enfin, s'il a fallu recommencer tout de nouveau le combat, et si, dans cette dernière action, j'ai perdu quelques soldats, n'est-ce pas le sort ordinaire de la guerre ? Trouverez-vous des généraux qui veuillent se charger du commandement de vos armées, à condition de ramener à Rome tous les soldats qui en seraient sortis sous leur conduite ? N'examinez donc point si, à la fin d'une bataille, j'ai perdu quelques soldats, mais jugez de ma conduite par ma victoire.

2. Write in French ; the blue boxes ; the beautiful leaves ; the cruel woman ; the thick cabbages ; the year 1882.

3. Infect the preterite of *manger* ; the future negative interrogative of *défendre*.

4. Write in French : My mother prefers this garden to that ; this is prettier, but that is larger.

One is happy if one is contented.

5. Write in French : Have I many mistakes in my translation ? You have less than your brother.

6. Translate at sight the following from *Télémaque* : Les hommes passent comme les fleurs qui s'épanouissent le matin, et qui le soir sont flétries et foulées aux pieds. Les générations des hommes s'écoulent comme les ondes d'un fleuve rapide ; rien ne peut arrêter le temps, qui entraîne après lui tout ce qui paraît le plus immobile. Toi-même, ô mon fils ! mon cher fils ! toi-même, qui jouis maintenant d'une jeunesse si vive et si féconde en plaisirs, souviens-toi que ce bel âge n'est qu'une fleur qui sera presque aussitôt séchée qu'écloie ; tu verras changer insensiblement les grâces riantes et les doux plaisirs qui t'accompagnent. La force, la santé, la joie s'évanouiront comme un beau songe ; il ne t'en restera qu'un triste souvenir : la vieillesse languissante et ennemie des plaisirs viendra rider ton visage, courber ton corps, affaiblir tes membres, faire tarir dans ton cœur la source de la joie, te dégoûter du présent, te faire craindre l'avenir, te rendre insensible à tout, excepté à la douleur.

7. Give the construction of *cè* before *qui*, *toi-même*, *t' in t'en*, *souvenir*, *rendre*.

8. Give the five primitive tenses of *verras*, *riantes*, *viendra*, *faire*, *craindre*.

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### EXAMINATION OF FOURTH CLASS FOR PROMOTION.

#### CÆSAR.

1. Translate the following :

Quod ubi Cæsar rescit, quorum per fines ierant, his, uti conquirerent et reducerent, si sibi purgati esse vellent, imperavit. Helvetios, Tulingos, Lativicos in fines suos, unde erant profecti, reverti jussit, et quod, omnibus fructibus amissis, domi nihil erat, quo famem tolerarent, Allobrogibus imperavit, ut iis frumenti copiam facerent.

Eadem secreto ab aliis quaerit; reperit esse vera: Ipsum esse Dumnorigem, summâ audaciâ, magnâ apud plebem propter liberalitatem gratiâ, cupidum rerum novarum: complures annos portoria reliquaque omnia Aeduorum vectigalia parvo pretio redempta habere, propterea quod, illo licente, contra liceri audeat nemo. His rebus et suam rem familiarem auxisse et facultates ad largiendum comparasse.

Eo quum de improvise celeriusque omni opinione venisset, Remi, qui proximi Galliae ex Belgis sunt, ad eum legatos Iccium et Andocumborium, primos civitatis, miserunt, qui dicerent, se suaque omnia in fidem atque in potestatem populi Romani permittere; neque se cum Belgis reliquis consensisse, neque contra populum Romanum conjurasse, paratosque esse et obsides dare et imperata facere et oppidis recipere et frumento ceterisque rebus juvare.

Hostes ubi et de expugnando oppido et de flumine transeundo spem se fefellisse intellexerunt, concilio convocato, constituerunt optimum esse, domum suam quemque reverti, et, quorum in fines primum Romani exercitum introduxissent, ad eos defendendos undique convenirent, ut potius in suis quam in alienis finibus decertarent et domesticis copiis rei fumentariae uterentur.



2. Give the principal parts of *resciit*, *reverti*, *reperit*, *auxisse*, *quaero*, *consensisse* and *fefellisse*.

Compare *celerius* and *potius*.

Give derivation of *domesticis* and *civitas*.

3. Decline *finis*, *domus*, *vectigalia*, *licente* and *fructus*.

4. Write synopsis in the third person and singular number of *erant profecti* and *vellent*.

5. Explain mood and tense of *conquirerent*, *vellent*, *esse* (*Dum-norigem*), *audeat*, *venisset*, *dicerent*, *reverti*, *introduxissent*; explain *redempta habere*.

6. Explain the construction of *his*, *fructibus amissis*, *summa audacia*, *rerum*, *pretio*, *Galliae*, *Belgis*, *expugnando oppido*, *domum* and *copiis*.

7. Change in the third selection *se . . . juvare* to the direct discourse.

#### LATIN GRAMMAR.

1. Mark the quantity of the penultimate syllable in *monerent*, *regerent*, *viae*, *clienti*. Give stems of *rex*, *dux*, *causa* and *dies*. Give the gender of *urbs*, *mos*, *res* and *cornu*.

2. Decline *civis*, *cohors*, *senex*, *lacus* and *spes*.

3. Decline neuter and *iens*. Compare *superus* and *fortiter*.

4. Write the synopsis in the second person plural of *patior*. Write the synopsis in the first person singular of the present system of *eo*.

5. Give the rules for place to, from, and in which, with examples of each. How are *hic*, *ille*, and *iste* used?

6. Explain the following constructions: *Nihil vini*. *Nostra in-terest*. *Consilii me paenitet*. *Me sententiam rogavit*. *Vendidit auro patriam*.

7. Give the construction in concessive clauses. Give the construction with *antequam* and *priusquam*.

8. A subjunctive dependent upon an historical present may be in what tenses, and explain why. What does the future perfect in a subordinate clause become in the indirect discourse?

Translate into Latin :

9. He says that he praised the pupils because they had been diligent.
10. Do not forget the ancient valor of the Roman people.

#### HISTORY.

1. What effect did the physical features of Greece have upon its history?
2. Give an account of the legislation of Lycurgus and the nature of the Spartan government.
3. Give an account of the Ionic revolt and the result of it?
4. Name in order the states that were supreme in Greek affairs.
5. What were the causes and results of the Peloponnesian War?
6. What three tribes composed early Roman society? How was society organized? What reforms took place under Servius Tullius?
7. Name the epochs in the history of the Roman republic; give dates, and name two principal events in each epoch.
8. Give an account of Roman provincial government.
9. Give a brief account of Sulla's career.
10. What causes led to the downfall of the republic? What position did Cæsar hold after the battle of Munda? What did Octavius hold after Antony's death? When did the empire begin?

#### ALGEBRA.

1. Define Algebra, a coefficient, a common multiple, elimination and simultaneous equations.
2. Simplify  $2a - [5b + \{3c - (a + [2b - 3a + 4c])\}]$ .
3. Multiply  $3a^{m-n}b^{-4n} + a^{-3n}b^n$  by  $4a^{2m}b^{4n} - 2a^{4n}b^{-3n}$ .
4. Factor  $x^5 + y^5$ ,  $x^6 - y^6$ , and  $x^2 - 23x + 120$ .
5. Find the highest common divisor of  $8a^2x^2 + 2a^2x - 3a^2$ , and  
6  $abx^3 + 5abx^2 - 2ab$ .
6. Free  $\frac{x^2 - y^{-2}}{ab^{-3} + x^{-1}}$  from negative exponents.

7. Solve  $\begin{cases} x+a=y+z. \\ y+a=2x+2z. \\ z+a=3x+3y. \end{cases}$

8. If I were to enlarge my field by making it 5 rods longer and 4 rods wider, its area would be increased by 240 square rods ; but if I were to make its length 4 rods less, and its width 5 rods less, its area would be diminished by 210 square rods. Required the present length, width and area.

9. My income and assessed taxes together amount to \$80. But if the income tax be increased 40 per cent, and the assessed tax diminished 25 per cent, the taxes will together amount to \$92.50. Required the amount of each tax.

10. A and B can perform a piece of work in 6 days, A and C in 8 days, and B and C in 12 days. In how many days can each of them alone perform it?

## ENGLISH AND SCIENTIFIC DEPARTMENT.

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### FIRST CLASS.

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#### POLITICAL ECONOMY.

1. Name and define the leading sub-divisions of Political Economy.
2. Give and illustrate the difference between real and nominal wages.
3. What are trades' unions? Give a brief history of their origin and development.
4. State the important sources of revenue to the United States government.
5. Mention the most important agents of exchange.
6. What is the objection to a double standard of value? State some of the countries where a double standard is used.
7. What are the advantages of gold and silver as coin?
8. State and discuss some of the arguments in favor of free trade.
9. State the cause of the failure of co-operative establishments.
10. State the useful functions of credit.

#### ENGLISH LITERATURE.

1. The origin of the English language.
2. The poets contemporary with Chaucer and their works.
3. The life and works of Ben Jonson.

4. The religious writers of the Civil War and the Commonwealth, and their works.
5. The works of Jonathan Swift.
6. Name and classify the authors from the Elizabethan to the Augustan Age.
7. The lake school of poets.
8. Life of Sir Walter Scott.
9. Name one work of each of the following authors, state the period when it was written, and the class of literature to which it belongs: Charles Dickens, Oliver Goldsmith, Lawrence Sterne, Richard Hooker, George Crabbe, Samuel Butler, John Bunyan, Alfred Tennyson, James Thomsen, and Edward Gibbon.
10. Name the author of each of the following works, state the period when it was written, and the class of literature to which it belongs: "Absalom and Achitophel," "Eikonoclastes," "John Gilpin," "The Rambler," "The Tempest," "The Four Georges," "Childe Harold," "Night Thoughts," "Essay on Man," and "Tam O'Shanter."

## ENGLISH ETYMOLOGY.

Give the derivation, history, and present meaning of the following words:

- |                 |               |
|-----------------|---------------|
| 1. Ambition.    | 9. Miser.     |
| 2. Biscuit.     | 10. Oxford.   |
| 3. Dexterity.   | 11. Porpoise. |
| 4. Epithet.     | 12. Retort.   |
| 5. Harbor.      | 13. Seminary. |
| 6. Interregnum. | 14. Tuesday.  |
| 7. July.        | 15. Vitriol.  |
| 8. Leicester.   | 16. Wessex.   |
17. State the spelling rules for words ending in *e*, with examples. Give two classes of exceptions, with examples.
  18. From what language are the prefixes *juxta* and *non* derived? Define them, with examples.

19. Give two suffixes meaning the *agent*, and two the *recipient*, with examples and spelling rules.

20. From what language are the prefixes *dys*, *syn*, and *peri* derived? Define them, with examples.

#### ASTRONOMY.

1. Compute the distance from the earth of a body having a horizontal parallax of 0.9". What planet comes nearest to that distance from us? Compute the distance of a fixed star having the same annual parallax.

2. Explain the dip of the horizon. Compute the dip for an elevation of 3,000 feet.

3. Define right ascension, declination, altitude, and azimuth. What is the altitude of the sun at mid-day, December 21, in latitude 10° S.?

4. Explain the Julian and Gregorian calendars. Given July 4, 1776, new style, to express in old style.

5. State the evidences in regard to atmosphere and water on the moon.

6. Which planets have solar transits, and why? When does the next important transit occur? What use is made of it? Is there ever a lunar transit of any heavenly body, and why? What is an occultation?

7. Describe Saturn's rings and their changes.

8. Describe the November and August meteors, with theory.

9. Describe Libra and Ursa Major.

10. Name ten constellations which will be above the horizon at 10 o'clock this evening; also give the proper and letter names of all the first magnitude stars then above the horizon.

#### GEOLOGY.

1. Describe three minerals peculiar to Rhode Island.

2. Describe ripple-marks, rill-marks, and faults; also the way in which they are made.

3. What methods are used in determining the true order of arrangement of strata?
4. Describe solfataras, fumaroles, and geysers.
5. Name the periods and kinds of rock of the lower Silurian age, in the eastern part of the United States. Also name and classify the most important fossils of those periods.
6. Describe the plants of the Carboniferous age.
7. How does the Appalachian region differ from the Interior Continental, as to kinds and thickness of rocks?
8. Name the periods of Mesozoic time. Describe the mountains made in that time in North America.
9. State the general characteristics of the life of the Quaternary age. Describe the eras pertaining to man.
10. Describe and classify the following, and state the ages when they lived: Pentremite, eurypterus, nummulite, pterodactyl, and goniatite.

#### CONSTITUTION OF THE UNITED STATES AND RHODE ISLAND.

1. What were the articles of Confederation? State some of their defects.
2. Give and discuss Art. I., Sec. III., Cl. 6, in regard to impeachment.
3. Give Art. I., Sec. VII., Cl. 2. How may a bill become a law?
4. Give and discuss the provisions in regard to the succession to the Presidency.
5. Give and discuss Art. III., Sec. I., in regard to the judicial power of the United States.
6. How may the Constitution of the United States be amended?
7. What is the nature of the first ten Amendments to the Constitution, and how came they to be adopted?
8. Give and discuss Amendment 14, Sec. 1, Citizens and their rights.

9. What was the form of government in Rhode Island before the adoption of the present Constitution, and what led to the change?

10. What are the duties of the Governor and Lieut.-Governor in this State, and how do they differ from those of the same officers in other States?

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## SECOND CLASS.

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### CHEMISTRY.

1. Write the formulas of five different alums. When used as an aluminum mordant, how many kilograms of ammonia alum will be required to produce the same effect as fifty pounds of potash alum, both crystallized?

2. Explain the use of the terms atom, molecule, allotropism, isomerism, and isomorphism; with examples.

3. Explain the preparation and uses of the muriatic acid of commerce, with equations.

4. Describe the effect of heat upon sulphur. Give tests for sulphates in solution, with equations.

5. Common hydrogen phosphide,—making, experiments, equations, volumetric composition, and vapor density.

6. Give the formula, preparation, and properties of common ether. Also give three other ethers of the series, with formulas.

7. Explain the preparation, nature, and uses of gun-cotton and collodion.

8. Describe bleaching powder and its use, with theory of its action.

9. Give methods of precipitating metallic copper, cupric hydrate, and cupric oxide from solutions of copper, with equations and colors.

10. Give the common and graphic formulas of the following substances, with the common names of five of them, and the colors of



five: Sodium bicarbonate, potassium hypochlorite, silver nitrate, calcium sulphate, cobaltous chloride, mercurous iodide, methyl hydrate, ferric bromide, potassium permanganate, magnesium nitrite.

#### BOOK-KEEPING.

1. What is a bill of exchange, and how is the acceptance of it usually signified?
2. Describe Book-keeping by double-entry, and state its advantages over single-entry.
3. What accounts usually close into profit and loss? Why?
4. Describe and state the use of the journal, sales, account current, invoice, and cash books.
5. Write a promissory note, J. Walker, maker, in favor of ourselves, and make the proper entry in a bill-book for the same.
6. Show the following transactions with a bank, in the proper book: N. Sherman deposited in the Third National Bank, Providence, August 1, 1882, \$2,225.50; 7th, \$1,000; 14th, \$2,000.50; 18th, \$3,225.75; drew checks August 4th, \$500.25; 9th, \$725.62 13th, \$2,567.22; 15th, \$257.88; 20th, \$97.50; 25th, \$37.55.
7. Make out a balance sheet from the following trial balance:

|                             | Dr.      | Cr.        |
|-----------------------------|----------|------------|
| N. Sherman, - - - - -       |          | \$1,555 25 |
| J. Brown, - - - - -         |          | 1,555 25   |
| Merchandise - - - - -       | \$756 00 |            |
| Expenses, - - - - -         | 900 25   |            |
| Bills payable, - - - - -    |          | 100 00     |
| Bills receivable, - - - - - | 1,675 87 |            |
| Interest, - - - - -         | 384 50   |            |
| Profit and loss, - - - - -  |          | 380 00     |
| Insurance, - - - - -        |          | 125 62     |

The inventory of merchandise on hand, \$500.00.

8. Post a merchandise account with three each of debits and credits, and close the same to new account.

9. Make a day-book entry in journal form of the following:

New York, October 2, 1878. Shipped, via Pennsylvania Railroad, and consigned to Faxon, Field & Co., Cincinnati, to be sold for their and our account, jointly, 1,000 bags Java coffee,  $\text{\$}$  O-I-B. 131,520 lb, furnished by us as agreed, @  $21\frac{1}{2}$  c. Insured in American Mutual Insurance Co., on open policy, \$30,000.00, @  $1\frac{1}{4}$  %. Drayage, labor, etc. \$162.13. Commission on \$28,978.40, @ 2 % \$579.57. One-half invoice for account of Faxon, Field & Co., \$14,778.95. One-half to Adventure to Cincinnati.

10. Total proceeds of sales of Silk ex Adv. Co. A. as  $\text{\$}$  sales-book, \$25,135.14. Deduct charges entered, \$955.95. Additional charges: Interest to date on charges entered, \$7.76; Storage and labor, \$19.71; Fire insurance  $\frac{1}{4}$  %, \$62.84; Cartage, \$5; Weighing, \$12.50. Brokerage,  $\frac{1}{4}$  % on \$9,219.53. Commission,  $2\frac{1}{2}$  % on \$25,135.14. Guarantee  $2\frac{1}{2}$  % on \$13,736.33. Landseer Brothers,  $\frac{1}{2}$  net proceeds, due April 1, '79, \$11,538.27. Adv. Co. A. our  $\frac{1}{2}$  the same.

#### TRIGONOMETRY.

1. Find the 7th root of 6 by logarithms.
2. What is the value of  $x$  in the following equation:

$$x = \frac{37}{228} \left( \frac{14.21 \times .00208}{.035} \right)^{\frac{1}{4}}.$$

3. Given one side of a right angled-triangle, equal to 122.4, and angle adjacent equal to  $44^{\circ} 1' 10''$ , required the angle opposite.

4. Given two sides of a triangle equal to 5 and 4 respectively, and the included angle equal to  $82^{\circ} 49' 09''$ ; required the angle opposite the first side.

5. How do you determine the characteristic of logarithms?

6. When two sides and an angle opposite one of them are given, show how many solutions there may be.

7. Draw an arc of  $40^{\circ}$  with sine, cosine, tangent, and co-tangent.

8. Show how you would determine the horizontal distance between two inaccessible objects.

9. Give formula for solving an oblique angled-triangle when three sides are given.

10. Find the area of a triangle, two of the sides being equal to 105 and 85 feet respectively, and the included angle to  $28^{\circ} 5'$ .

#### GEOMETRY.

1. Define the terms spherical sector, cylinder, prism, frustum of a pyramid, and quantity.

2. State the difference between an axiom and a postulate.

3. B. I., P. XXX., Cor. 2. If two straight lines are cut by a third, making the opposite exterior and interior angles equal.

4. B. II., P. IX. If two quantities be increased or diminished by like parts of each.

5. B. III., Prob. VI. Given two angles of a triangle to construct the third.

6. B. IV., P. IX. The square described on the difference of two lines.

7. B. VI., P. VII. If one of two parallels is perpendicular to a plane.

8. B. VII., P. XII. Two parallelopipedons having equal altitudes are to each other.

9. B. VIII., P. VII. Any section of a sphere made by a plane.

10. Required the volume of a cylinder whose altitude is 12, and diameter of whose base is 15.

#### HEAT AND ELECTRICITY.

1. Describe experiments to show the effect of heat upon the volume of solids, liquids and gases.

2. State the law of Charles and that of Mariotte. A certain quantity of gas measures 310 cubic centimeters at  $10^{\circ}$  C.; what would be its volume at  $10^{\circ}$  F., if the pressure were increased one-half?

3. Describe the process of distillation.
4. What is Joule's equivalent? Find the mechanical equivalent of the amount of heat needed to raise 6 pounds of tin from 374° F. to its melting point, 442° F., and to melt it. [Specific heat, .056; latent heat, 25.6 F.]
5. Show how the steam acts in a double-acting steam engine.
6. What is the effect of breaking a magnet? Explain.
7. Explain the gold leaf electroscope and its action.
8. Explain the ordinary plate electric machine and its action.
9. Explain the Leyden jar with movable coatings, and its use.
10. Describe the insulating stool and two experiments with it.

#### RHETORIC.

1. Punctuate the following, giving the rule for each point used:  
“O pardon me thou bleeding piece of earth that I am meek and gentle with these butchers thou art the ruins of the noblest man that ever lived in the tide of times woe to the hand that shed this costly blood over thy wounds now do I prophesy which like dumb mouths do ope their ruby lips to beg the voice and utterance of my tongue a curse shall light upon the limbs of men.”
2. Define style, and give its important elements.
3. Define tautology and redundancy; give examples of each.
4. Name the figures of speech in the following:  
Within the hall are song and laughter,  
The cheeks of Christmas grow red and jolly.  
And sprouting is every corbel and rafter  
With the lightsome green of ivy and holly.  
Through the deep gulf of the chimney wide  
Wallow the Yule log's roaring tide.
5. Define synecdoche and hyperbole; give examples of each.
6. Define wit, and give some of its uses.
7. Define elegance of style, and give some of its requisites.
8. What is a loose sentence? Give an example.

9. Divide the following verses into feet, and name each foot :  
 Half a league, half a league,  
 Half a league onward.  
 Erin my country, though sad and forsaken.  
 Then far below in the peaceful sea.  
 But rapture and beauty they cannot recall.
10. What is poetry? Describe some of its requisites.

THIRD CLASS.

ALGEBRA.

1. Reduce the following expression to its simplest form :  
 $a + 2m - \{ c + x - [a - m - (c - 2x)] \}.$
2. What is the least common multiple of  $4x^3 + 2x$ ,  $6x^2 - 4x$ , and  $6x^2 + 4x$ ? Factor  $a^4b^2 + 2a^3b^3 + a^2b^4$ .
3. Reduce  $\frac{a^2b}{4x^3y}$  to the form of an entire quantity. From  $\frac{1}{x-y}$  subtract  $\frac{1}{x+y}$ .
4. Divide  $a$  by  $\frac{x}{x+y} \times \frac{a}{x-y}$ .
5. What number is that from which if 91 be subtracted,  $\frac{1}{5}$  of the remainder will equal  $\frac{1}{10}$  of the number?
6. A gentleman bought a gold and a silver watch, and a chain worth \$25. When he put the chain on the gold watch, it was worth three and a half times more than the silver watch; but, when he put the chain on the silver watch, it was worth one-half the gold watch and fifteen dollars over; what was the value of each watch?

7. Write the eighth power of  $m + n$ .
8. Divide  $(ab^2c^3)^{\frac{1}{2}}$  by  $(a^2b^3c^4)^{\frac{1}{3}}$ .
9. Find the values of  $x$  and  $y$  in the equations  $\begin{cases} 3x^2 + xy = 336 \\ 4x + y = 40 \end{cases}$ .
10. The first term of an arithmetical series is 275, the last term 5, and the number of terms 46; required the sum of the terms?  
Find the 8th term in the following series 2, 6, 18, 54. . . .

#### NATURAL PHILOSOPHY.

1. Define elasticity, porosity, brittleness, malleability, and ductility.
2. What is momentum? By falling a certain time, a 200lb ball has acquired a velocity of 321.6 feet. What is its momentum?
3. Define centre of gravity, line of direction and base of a body.
4. State the law of the wheel and axle. A power of 70lb on a wheel whose diameter is 10 feet, balances 300lb on the axle. Give the diameter of the axle.
5. Describe the hydrostatic bellows; explain the principles involved.
6. Write the formula for velocity in hydrokinetics. With what velocity will water issue from an orifice under a head of 256 feet? Describe the over-shot wheel.
7. Describe Torricelli's experiment in regard to pressure of air. Explain the siphon.
8. What is the effect of temperature upon the velocity of sound? What is the law for the intensity of sound?
9. Describe the telephone.
10. State all the facts you know in regard to plane mirrors.

#### MODERN HISTORY.

1. State the causes which led to the "Thirty-Years' War."
2. How did Louis XIV. treat the Huguenots?

3. What was the condition of the laboring classes in the seventeenth century?
4. Give an account of the "Treaty of Union" between England and Scotland in 1707.
5. What was the character of Frederick William of Prussia?
6. Give an account of the siege of Pultowa by Charles XII., of Sweden, and of the battle which followed.
7. What concessions were made to the people by the French nobles and clergy on the 4th of August, 1789?
8. Describe the overthrow of Prussia by Napoleon Bonaparte.
9. Give an account of the "Repeal of the Corn Laws."
10. What part did France take in the struggle between Austria and Sardinia in 1859?

MEDIEVAL AND MODERN HISTORY.

1. Give an account of the Saxons.
2. Describe the conquest of Spain by the Saracens.
3. How were municipalities instrumental in undermining feudalism?
4. Describe the capture of Jerusalem at the end of the First Crusade.
5. What was the Hanseatic League?
6. What were the "Wars of the Roses"?
7. Give an account of Prince Henry of Portugal, and of the discoveries made under his direction.
8. Describe the career of Cardinal Wolsey.
9. What was the immediate cause of the execution of Mary, Queen of Scots?
10. Describe the character of James I., of England.

ANCIENT HISTORY.

1. What were the "isles of Greece"?
2. Describe the siege of Troy.

3. What was the constitution of Sparta?
4. Give an account of the leagues formed during the last days of Grecian history.
5. Who was Herodotus? Describe his works.
6. Into what classes were the citizens of Rome divided from the earliest times? Mention the privileges of each class.
7. Who were Licinius Stolo and Lucius Sextius?  
What were the two evils in the state to be remedied?  
What measures did they propose?
8. What led to the first Punic War?
9. Who was Catiline? Describe his career.
10. What civilizations were found within the Roman Empire in the time of Augustus?

#### BOOK-KEEPING.

1. Describe a time-book, a bill-book, and an invoice.
2. Mention the four cases in which negotiable paper is bills receivable; also the three cases in which negotiable paper is bills payable.
3. Draw a draft at sight; write an acceptance and make a promissory note.
4. Write the following transactions according to single entry:  
October 6, 1881. Bought of Henry Johnson & Son, lumber, as per bill, \$135.00; gave them our note (No. 11) at 30 days, payable at Providence National Bank in full of account, \$210.20.  
Oct. 8, 1881. Sold for cash 1 bedstead, black walnut, \$32.00.  
" 15, " George H. Cole has assumed the account of Silas Howe, \$64.50.  
Nov. 17, 1881. Paid wages in cash as per time-book, \$72.25.  
" 21, " Sold Thomas Wheelock, on account, 1 set cottage furniture, (blue,) \$70.00.



5. Close the following account :

| Dr.     |              | MISS BETSY CRIM. |         |         |            | Cr. |         |
|---------|--------------|------------------|---------|---------|------------|-----|---------|
| 1877.   |              |                  |         | 1877.   |            |     |         |
| Oct. 13 | To sundries, | 2                | \$42 00 | Oct. 30 | By bureau, | 3   | \$19 00 |
| " 27    | " bureau,    | 3                | 19 00   |         |            |     |         |

6. Give the rules for debiting and crediting in double-entry. Into what classes can all ledger accounts be divided?

7. Journalize the following transactions: Commenced business January 1, 1882, with the following effects: Cash on hand \$1,000; merchandise on hand, \$1,300; 50 shares Nevada Central, \$5,000; I own  $\frac{1}{2}$  steamer Speedwell, \$6,000. I owe James Mason on my note, \$500; I owe Henry Truman on book account, \$600.

Jan. 2. Gave Jonas H. Leech, in settlement of his account, my note at 60 days for \$600.

Jan. 3. Settled with Henry Thomas for amount due him on book account, \$1,500; less 5% discount for cash, \$75.

8. Journalize the following transactions:

Jan. 4, 1882. Exchanged notes with George Sampson for our mutual accommodation, \$600.

Jan. 5. Bought of Seth Hanson 100 bbls. flour @ \$7. Gave him in payment William Mills' note for----- \$400 00  
and my own note at 90 days----- 300 00

Jan. 6. Received from my uncle's estate----- 5,000 00

" 6. Gave to the Michigan sufferers----- 50 00

" 9. Sold W. A. Mason, 10 bbls. flour, @ \$7----- 70 00

100 lb sugar @ 12c----- 12 00

40 boxes of raisins, @ \$2----- 80 00

1 hogshead of molasses @ \$15----- 15 00

Received in part payment his note at 60 days--- 65 00

The balance on account.

9. Close the following related accounts, March 31, 1875 :

| DR.   |    |                  |   | PROPRIETOR.  |      |    |              | CR. |           |  |  |
|-------|----|------------------|---|--------------|------|----|--------------|-----|-----------|--|--|
| 1875. |    |                  |   | 1875.        |      |    |              |     |           |  |  |
| Jan.  | 1  | To Henry Thomas, | 1 | \$200 00     | Jan. | 1  | By sundries, | 1   | \$5000 00 |  |  |
| DR.   |    |                  |   | MERCHANTISE. |      |    |              | CR. |           |  |  |
| 1875. |    |                  |   | 1875.        |      |    |              |     |           |  |  |
| Jan.  | 4  | To Jas. Webster  | 2 | \$1,110 00   | Jan. | 14 | By cash,     | 2   | \$264 00  |  |  |
| "     | 10 | " Wm. Turner,    | 2 | 990 00       | Feb. | 1  | " F. Wilson, | 3   | 528 00    |  |  |
|       |    |                  |   |              | "    | 12 | " bills rec. | 3   | 536 00    |  |  |
|       |    |                  |   |              | Mch. | 4  | " sundries,  | 4   | 773 00    |  |  |

March 31, 1875. Inventory of merchandise, \$259.

| DR.   |    |              |   | PROFIT AND LOSS. |  |  |  | CR. |  |  |  |
|-------|----|--------------|---|------------------|--|--|--|-----|--|--|--|
| 1875. |    |              |   | 1875.            |  |  |  |     |  |  |  |
| Feb.  | 10 | To cash,     | 3 | \$11 25          |  |  |  |     |  |  |  |
| Mch.  | 31 | " R. Bailey, | 5 | 50 00            |  |  |  |     |  |  |  |

10. Day book in Journal form :

|  |       |            |
|--|-------|------------|
| Henry Jones begins business January 1, 1882 ; his effects are    |       |            |
| $\frac{1}{2}$ steamboat Pawtucket, valued at                     | ----- | \$5,000 00 |
| Cash on hand   | ----- | 7,000 00   |
| A note in his favor drawn by George Esty, due Feb. 23,           |       |            |
| 1882   | ----- | 4,120 00   |
| He owes the following debts :                                    |       |            |
| To Clark & Rice  | ----- | \$952 00   |
| " Moss & Mason   | ----- | 2,220 00   |
| Jan. 3. Sold $\frac{1}{10}$ of steamboat Pawtucket for cash, de- |       |            |
| posited in Providence National Bank                              | ----- | 3,000 00   |
| Jan. 4. Bought house and lot 45 Kling street for                 |       |            |
|  | ----- | 17,000 00  |

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Gave in part payment  $\frac{1}{10}$  steamboat Pawtucket-----\$3,000 00  
Check on Providence National Bank----- 6,000 00  
My bond secured by mortgage on the property payable in two years  
for the balance.

## PHYSIOLOGY.

1. Name and locate the principal bones in the human body.
2. Describe the spinal column.
3. What are the tendons?
4. Describe the sebaceous glands.
5. Name the kinds of albuminoids ; mention their properties and state their importance.
6. Describe the stomach and gastric juice.
7. Describe the veins.
8. Give an account of the movements in respiration.
9. Describe the sympathetic system.
10. What are the functions of the medulla oblongata and of the cerebellum?

## GIRLS' DEPARTMENT.

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### SENIOR CLASS—FOURTH YEAR.

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#### MENTAL PHILOSOPHY.

1. Distinguish between memory and perception.
2. State whether the manner in which knowledge is acquired affects our recollection of it.
3. Give the relation of memory to the imagination.
4. In what does reasoning consist?
5. Define judgment.
6. State the kinds of testimony.
7. Give the general law in respect to evidence that is derived from the nature of man.
8. Define indirect evidence.
9. State its value.
10. Give four important ways of improving the reason.

#### ASTRONOMY.

1. State the belief in respect to the antiquity of the constellations. Describe one you know. Define binary stars.
2. Give the facts in respect to the distance and faintness of the nebulae.
3. Explain the inequality in the length of days and nights.
4. Describe the chromosphere, prominences and corona of the sun.
5. Explain the phases of the moon. Give three reasons for the assertion that the moon has no atmosphere.

6. Describe the planet Venus.
7. Give the history of Halley's comet.
8. How can we determine whether a substance is of meteoric origin? How can we tell whether a certain number of meteors belongs to a group? What becomes of the ashes of meteors? What celestial appearances are now supposed to be due to meteors? Give the latest discovery connected with meteorites.
9. Give the headings of the three celestial systems and describe the main circle in each.
10. Demonstrate the proposition that the altitude of the pole equals the latitude of the place.

#### PARADISE LOST.

1. Compare Milton's theme in importance and interest with those of Homer and of Virgil.
2. Name passages in the first book remarkable for sublimity.
3. How is Satan represented?
4. State the reasons that enhanced the popularity of *Paradise Lost* when it was written which now diminishes its interest.
5. Name five passages that have impressed you.

#### MORAL SCIENCE.

1. State the objection to the term self-culture.
2. Give the law of limitation and name the conditions for its application.
3. Distinguish between the appetites and the desires.
4. What are the results to be obtained from strength, beauty and grace?
5. What is the correlative of rights?
6. State the foundation for the right of property and its relation to society.
7. Discuss inconsiderate slander.

8. Is it the business of legislation to oblige persons to do right?
9. Have our impulses moral character?
10. What is the importance of truth to the well-being of society and the character of the person?

### GEOLOGY.

1. Give the common tests for quartz, feldspar, calcite, clay and iron ores.
2. Describe the work of the winds and illustrate by stating their action on the coast of the Bay of Biscay.
3. Define anticlinal and synclinal axes ; dip, strike, fault, conformable and unconformable strata.
4. Describe the formation of veins and distinguish between dikes and veins.
5. What facts are accounted for on the supposition that the earth is a cooling globe.
6. Give a general description of the rock-making during the Silurian age and general statement with reference to the abundance of life.
7. Describe one of the Chautauqua geological diagrams, selecting any one between numbers three and ten.
8. What were the characteristics of mesozoic vertebrates.
9. Trace the gradual formation of the North American continent.
10. What reasons are there for believing in the existence of a glacial period?

### LATIN.

#### THE *ÆNEID*.—BOOK VI.

##### *Lines 156—383.*

1. Lines 162–165. Translate ; construction of *quo*.
2. Lines 187–189. Translate ; explain mode of *ostendat*.
3. Lines 205–209. Translate.

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4. Line 216. Why were cypresses placed around the pyre?  
Line 220. Explain "Fit gemitus."
  5. Line 231. Explain "novissima verba." Line 233. Construction of *viro*.
  6. Lines 237-241. Translate.
  7. Lines 250-252. Explain "matri Eumenidum magnæque sorori," "Proserpina" and "Stygio regi."
  8. When did Æneas perform his sacrifices and when did he begin his journey to Hades? Quote the Latin in support of your answer.
  9. Line 258. Who is the "dea"? Who are the "profani"?
  10. Lines 264-267. Translate. What is "Phlegethon"? Refer to line to support your answer.
  11. Lines 285-289. Describe one of the monsters.
  12. Lines 292-294. Explain the mode and tense of the verbs.
  13. Lines 299-300. Construction of *squalore* and *flamma*.
  14. Lines 309-312. Translate.
  15. Lines 322-324. Translate.
  - 16 and 17. Lines 340-346. Translate.
  18. Line 347. Principal parts of *fefellit*.
  19. Lines 363-365. Translate through *malis*; construction of *quod*.
  20. Line 383. Translate "gaudet cognomine terræ." Where is the place?

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SECOND CLASS—THIRD YEAR.

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## GEOMETRY.

1. Prove that if two angles have two sides parallel and lying in the same direction from their vertices, while the other two sides are parallel and lie in opposite directions from their vertices, the two angles are supplements of each other.
2. Prove that the three bisectors of the three angles of a triangle meet in a point.
3. Prove that in the same circle or equal circles incommensurable arcs have the same ratio as the angles at the centre which they subtend.
4. Prove that in the same circle or equal circles, equal chords are equally distant from the centre; and of two unequal chords the less is at the greater distance from the centre.
5. Prove that if the sum of two arcs be more than a circumference, the greater arc is subtended by the less chord and conversely the less chord subtends the greater arc.
6. Prove that if from a point without a circle two secants be drawn the whole secants and the parts without the circle are reciprocally proportional. What is a reciprocal proportion?
7. Prove that in any triangle the product of any two sides is equal to the product of the diameter of the circumscribed circle multiplied by the perpendicular let fall upon the third side from the vertex of the angle opposite.
8. Construct a circle that shall pass through three given points not in the same straight line.
9. How long is the perpendicular drawn from the vertex of the right angle to the hypotenuse of a right triangle, provided the seg-



ments of the hypotenuse formed are nine inches and four inches long respectively? What is the sum of the angles of an octagon?

10. How many sides has a polygon, the sum of whose interior angles is double that of the exterior angles made by producing each side in succession?

### PHYSICS.

1. What is the Fahrenheit reading corresponding to  $4^{\circ}$  centigrade? What is the centigrade reading corresponding to  $12^{\circ}$  Fahrenheit?

2. What laws govern the melting of solids? Illustrate the second law.

3. Which is hotter and which has more heat, steam or water at  $212^{\circ}$  F.? Will the same amount of heat affect the temperature of all substances alike?

4. Describe an experiment which you have seen showing that fluids are poor conductors of heat.

5. Why is heat produced by percussion? Explain by illustration.

6. What do we mean when we say that a magnet is polarized?

7. What proof have we that the earth is a magnet?

8. Prove that there are two kinds of electricity.

9. What was Franklin's great experiment, and what did it prove?

10. To what are the luminous effects of electricity due? Mention some instances of light produced by electricity.

### CHEMISTRY.

1. What do we mean by the photosphere of the sun? What is the solar spectrum?

2. Mention an acid which is a solid at ordinary temperatures; one which is a liquid, and one which is a gas. Give the symbols which represent the chemical composition of slacked lime, sugar of lead, calomel, marble and malachite.

3. What are the properties of ozone?

4. How is nitric acid made? Give the reaction.
5. From what sources is copper obtained? What are its properties and uses?
6. Explain the tempering of steel.
7. Name four well-known crystalline modifications of alumina; two crystalline, and two amorphous forms of silica. Is there any difference between silicon and silica? Between aluminum and alumina?
8. Give two tests which may be employed to detect the presence of  $\text{CO}_2$  and two remedies in case it is found in excess in the atmosphere.
9. What gives rise to the explosion of gases, and what is supposed to cause the report?
10. What is usually sold as arsenic? What are the properties of pure arsenic and the process of its manufacture?

#### ENGLISH LANGUAGE.

1. Trace the Saxon wave of migration across Europe into England, and give some account of the Saxon literature, poetry and prose.
2. Name two Anglo-Saxon poems, and give account of one of them.
3. Give an account of Roger Bacon; of the scholastic philosophy. Mention some names of noted schoolmen.
4. How long did the Saxon language remain pure? What classes of English words are of Saxon origin? Name the Saxon prefixes and suffixes.
5. Name the important literary productions of the fourteenth century, and describe one of them.
6. What changes in the language had become fixed in the fourteenth century?
7. What was the spirit of the sixteenth century, and what causes conspired to bring about this spirit?

8. What was the influence upon the language of French literature?
9. Compare the language and writings of Milton and Bunyan, of Swift and Defoe.
10. How does the use of the language in England differ from its use in America? How have American authors enriched the language?

### POETRY.

1. To whom is the origin of rhyme attributed? Was it employed in ancient classic verse?
2. How does the plan of rhythm adopted by Pope and Dryden differ from that of Shakspeare and Milton? What is elision and why was it formerly used?
3. Name the different classes of poetry, giving one illustration of each class.
4. To what class of poems does *The Bard* belong? How has Gray divided it? Give the metre of the first stanza.
5. Relate the tradition which suggested this poem. Of what race are the Welsh, and what did they call themselves? Who was their prince in the time of Edward I.? What cause may be assigned for Edward's hatred of the bards?
6. Where are Snowdon, "Conway's foaming flood," Plinlimmon "Arvon's shore," and Berkeley?
7. In lines 71-76, explain the imagery, giving the historical basis of the poet's figures.
8. "No more our long-lost Arthur we bewail,  
All hail ye genuine kings, Britannia's issue hail!"  
What tradition is referred to in the first of these lines, and how does the bard represent it as fulfilled? Why would the Welsh be more willing to acknowledge the monarchs here indicated, than the preceding kings? What claim to the English throne had the first of this line?

9. In lines 125-130, what literary period is referred to? What writers and writings are probably meant? What is meant by "buskin'd measures?"

10. In the last stanza, describe the arrangement of the rhyme, and if there are any defects, tell what they are.

VIRGIL.—BOOK II.

1. Translate and scan lines 77-80.

2. Give the tense of *fuert*; the tense and principal parts of *finet*; and the construction of *quodcumque*, *si* and *improba*.

3. Translate lines 183-188.

4. Why was the possession of the Palladium believed to be of special importance by the Trojans? Why are *piaret* and *possit* in the subjunctive mood; and what is the construction of *coelo*, *portis* and *populum*?

5. Translate lines 268-273.

6. What do *quo* and *ut* connect? Construe *perque pedes trajectus lora tumentes*. Give two English words derived from Latin words in this passage.

7. Translate lines 348-353.

8. What do *audentem* and *frustra* modify? Give the synopsis of *moriatur*. What is the distinction between *adytis* and *aris*?

9. Translate lines 469-475.

10. What is meant by *vestibulum*; and how were the rooms of ancient Greek and Roman dwellings arranged? What belief of the ancient Romans is referred to in *mala gramina pastus* and *tumidum*?

## THIRD CLASS—SECOND YEAR.

## RHETORIC.

1. To what other studies is rhetoric allied? Point out its province as distinguished from these.

2. What offices may be performed in a sentence by a prepositional phrase? By an infinitive phrase? By a participle?

Name five different shades of thought that may be expressed by adverb clauses. Give an example of each.

3. Divide and expand the following sentence into as many simple statements as possible: Half-way down a by-street of one of our New England towns, stands a rusty, wooden house, with seven acutely peaked gables facing towards various points of the compass, and a huge clustered chimney in the midst.

4. What is the relation of a paragraph to the sentences of which it is composed and to the composition in which it stands?

5. By what steps may a framework be constructed out of the material collected for a composition? Why is the arrangement of the leading ideas important?

6. Do the rules of rhetoric interfere with the writer's individuality? Give a reason for your answer.

7. In what cases are we liable to mistake one word for another? In the above question, is the word *liable* correctly used? Would likely be equally correct? Why?

8. What rules should be followed in the arrangement of words, phrases, and clauses?

9. What is the origin of figures of speech in a language? Name five of the common figures of speech and give an example of each.

10. Complete appropriately the three similes begun below, and

express in metaphors the ideas of the two literal sentences: She came and went as lightly —. The street was as silent as —. The young horse-chestnut leaves were softer than —. How many stars there are! The Norman baron lay dying.

#### MEDIEVAL AND MODERN HISTORY.

1. Trace briefly the history of the Goths in Europe.
2. Name the two most important events that occurred during the reign of the Plantagenets and give the dates. Which of these kings did England best service, and how? Which did the least good, and why?
3. Who was Mohammed, and for what was he noted? What was the Hegira? Give the date. How far had Mohammed's religion spread in 632 A. D.? How far had it spread in 732 A. D.?
4. What was the condition of the lower orders of the people during the feudal times? Was it improved or otherwise with the breaking up of the system? Why? In what period of history have these classes of people obtained most of their rights?
5. Mention two good effects of Chivalry and an evil one which still exists. Why are American women allowed more freedom of action than women of most European countries?
6. In whose reign did Puritanism arise? Give its history.
7. What was the Petition of Right and what was the Bill of Rights? Give three articles of one and state of which they are.
8. Give an account of the most important event in the reign of Queen Anne.
9. State the causes of the French Revolution. What was the occasion of the breaking out of the Revolution?
10. Give your opinion of the character of Napoleon Bonaparte, and illustrate by reference to his history.

## ENGLISH LITERATURE.

1. How is knowledge of an English author best obtained? What steps should be taken in the study of any poem? Name the short poems which you have studied this term.
2. In "The Battle of Blenheim," where is the scene laid? State the historical fact referred to. Into what scenes should the poem be divided?
3. In the poem "Lucy Gray," what picture is drawn of Lucy? What became of her? How do you know?
4. Give your opinion of the beauty and effect of "Rosabelle," with reason. Explain the words *barge*, *firth*, *inch*, *sea-mew*, *water-sprite*.
5. What is a paraphrase? Paraphrase the following:  
"Blazed battlement and pinnet high,  
Blazed every rose-carved buttress fair—  
So still they blaze when fate is nigh  
The lordly line of high St. Clair."
6. Name five of the Waverley novels. Name one which you have read and state your impressions of it. Who was "the Wizard of the North?" Give another name by which he was sometimes called, and explain each.
7. For what is Dr. Johnson most famous? Mention his other principal works. Name the chief members of the literary club to which he belonged, stating for what each was noted.
8. Quote from each of the following works, naming the authors: "The Deserted Village," "The Elegy Written in a Country Churchyard," and "The Lady of the Lake," or "The Lay of the Last Minstrel."
9. Explain allusions in the stanza:  
"Some village Hampden that with dauntless breast  
The little tyrant of his fields withstood,  
Some mute, inglorious Milton here may rest,  
Some Cromwell guiltless of his country's blood."

10. What knowledge have you of the following literary allusions: Bozzy, the Fiery Cross, Roslin chapel, "Old Peveril," James Fitz-James, Rowena, the Jessamy Bride, Aberbrothok, Yarrow, and Rydal Mount?

#### PHYSICS.

1. Define two universal and two characteristic properties of matter. By what simple experiment may the impenetrability of air be illustrated?

2. What are the three laws of motion? Who was their discoverer, and for what was he especially noted?

3. Give a familiar example of a body in stable, one in unstable, and one in neutral equilibrium. If these bodies be disturbed, what effect upon the position of the centre of gravity in each case?

4. What is the advantage in the use of a fixed pulley? Of one or more movable pulleys? What power would be required, with one fixed pulley, to balance a weight of one hundred pounds? With a single movable pulley?

5. If a barometer be carried into a mine, will the mercury rise or fall? Why? If it be placed under the receiver of an air-pump and the pump worked, what effect upon the mercury? Why?

6. What is the difference between a musical sound and a mere noise?

7. What is it that enables us to distinguish between different instruments, or between the voices of different persons, even when the pitch is the same?

8. Explain the principle by which a stick, thrust obliquely into water, appears bent at the surface, illustrating by a figure.

9. Mention some phenomenon, of common occurrence, which depends upon some principle of Pneumatics or Acoustics, and state what that principle is.



10. Describe some simple experiment which you yourself have performed, to illustrate some principle of Physics which you have studied.

## CÆSAR.

Translate :

Sic omnibus hostium copiis fuis armisque exutis, se in castra munitionesque suas recipiunt. Quo proelio facto, quod saepius fortunam tentare Galba nolebat, atque alio se in hiberna consilio venisse meminerat, aliis occurrisset rebus viderat, maxime frumenti commeatusque inopia permotus, postero die omnibus ejus vici aedificiis incensis, in provinciam reverti contendit ; ac nullo hoste prohibente aut iter demorante, incolumem legionem in Nantuates, inde in Allobroges perduxit ibique hiemavit.

Horum auctoritate finitimi adducti (ut sunt Gallorum subita et repentina consilia), eadem de causa Trebium Terrasidiumque retinent, et celeriter missis legatis per suos principes inter se conjurant, nihil nisi communi consilio acturos eundemque omnis fortunae exitum esse laturos ; reliquasque civitates sollicitant, ut in ea libertate, quam a majoribus acceperant, permanere quam Romanorum servitutem perferre mallent.

What is the construction of *copiis*?

Give the principal parts of *fuis*.

Give the participles of *fuis*.

Give the meaning of *copia* in the singular and in the plural.

By what case is *in* followed, and why?

Give the principal parts of *recipiunt*.

Give the synopsis of *recipiunt* in the voice, mode, person and number in which it is found.

Inflect *recipiunt*.

Compare *saepius*.

Give the principal parts of *nolebat*.

Give the synopsis of *nolebat* in the mode, person and number in which it is found.

What does *quod* connect?

Give the construction of *se*.

What is the subject of *occurrisse*?

Give the construction of *occurrisse*.

What is the construction of *rebus*?

Compare *maxime*.

Give the participles of *permotus*.

Give the construction of *die*.

Give the principal parts of *incensis*.

What does *aut* connect?

What do *prohibente* and *demorante* limit?

Give the construction of *finitimi*.

Give the principal parts of *adducti*.

Give the participles of *adducti*.

Give the construction of *auctoritate*.

Give the construction of *Gallorum*.

Give the construction of *legatis*.

Give the construction of *nihil*.

What is the subject of *acturos esse*?

What is the construction of *acturos esse*?

Give the principal parts of *laturus esse*.

Give the construction of *consilio*.

What does *ut* connect?

What part of speech is *quam*?

What does *quam* connect?

Give the construction of *quam*.

Compare *majoribus*. What ablative is *a majoribus*?

Give the principal parts of *permanere*.

What does *quam* connect?

Is *quam* a coordinate or subordinate conjunction?

On what do *permanere* and *perferre* depend?

Give the principal parts of *mallent*.

Give the synopsis of *mallent* in the mode, person and number in which it is found.

Give the reason for the mode of *mallent*.

Give the reason for the tense of *mallent*, and state by what tenses the historical present can be followed, and the reasons.

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#### FOURTH CLASS — FIRST YEAR.

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#### PHYSIOLOGY.

1. State several important facts concerning the bones. Describe a joint.
2. What is the design of muscles? Explain their mode of contraction. How are they affected by exercise? How are the other parts of the body benefited?
3. How does the true skin differ from the cuticle? What are regarded as appendages of the skin in man and the lower animals.
4. What is the design of food? How does the action of the muscular and inner coats of the stomach affect digestion?
5. What is the office of each of the following organs;—pulmonary artery, aorta, trachea, epiglottis and left subclavian vein?
6. Of what use is the blood and what are the changes which take place in it?
7. Describe the lungs and explain how the organs of respiration may be so improved as to increase their capacity and power.
8. How does circulation affect respiration?

9. Which have the stronger walls, auricles or ventricles of the heart, and why? What blood in the body must pass through three sets of capillaries?

10. State five facts which go to show how health may be improved by a proper care of the organs of digestion, circulation and respiration.

### EXAMINATION IN ALGEBRA.

1. A certain company at an inn had a reckoning of \$143 to pay, but four of the company being so ungenerous as to go away without paying, the rest were obliged to pay one dollar apiece more than they would have done if all had paid. What was the whole number of persons?

2. A house contains two square rooms, the area of which are to each other as 25 to 9; and a side of the larger room exceeds a side of the smaller by 10 feet. What are the dimensions of the rooms?

3. A trader bought some barrels of flour for \$60. Had he bought 3 more barrels for the same sum, each barrel would have cost him one dollar less. How many barrels did he buy?

4. The receiving reservoir at Yorkville is a rectangle, 60 rods longer than it is broad, and its area is 5500 square rods. What are its length and breadth?

5. Given  $\frac{\sqrt{9x} + 6}{\sqrt{x} + 2} = \frac{16 - \sqrt{x}}{\sqrt{x}}$ , to find the value of  $x$ .

6. Given  $\frac{5x - 9}{\sqrt{5x} + 3} - 1 = \frac{\sqrt{5x} - 3}{2}$ , to find value of  $x$ .

7. Given  $x + \sqrt{x^2 - \sqrt{2 - 4x}} = 1$ , to find value of  $x$ .

8. Multiply  $c\sqrt{a} + d\sqrt{b}$  by  $c\sqrt{a} - 3d\sqrt{b}$

9. Find the fifth root of  $4c^2\sqrt{2c}$ .

10. Divide  $\sqrt[3]{a^2bc}$  by  $\sqrt[5]{ab^2c^3}$ .

## HISTORY.

1. When and how did Assyria, Babylonia and Egypt become a part of the Persian Empire?
2. What can you say of Egyptian sculpture and painting? What is "The book of the Dead?" "The Zend-Avesta?"
3. What changes took place in the government of Athens during the two hundred years preceding the Persian wars?
4. Name five leading men of Athens. Name five noted battles fought in Greece before it was conquered by Philip of Macedon.
5. Which conflict is reckoned among the world's great battles? Name two victims of ostracism.
6. Of what special use were the Grecian leagues? What event is associated with 146 B. C.?
7. Give a sketch of Roman history from the earliest times to the civil strife.
8. Name five men who were prominent in the civil strife, and state how they became so.
9. Name five Roman emperors. In whose reign did all the provincials acquire Roman citizenship?
10. Who were the three great barbaric leaders who marched against Rome? Who is your favorite Roman, and why?

## EXAMINATION IN BOTANY.

1. Describe the Liliaceæ and Leguminosæ and name plants belonging to each family.
2. Define *perfect*, *apetalous*, *irregular*, *double* and *symmetrical* flowers.
3. Describe *papilionaceous*, *salver-shaped*, *bell-shaped*, *funnel-form* and *tubular* corollas.
4. Point out differences between a *raceme* and a *spike*, between a *cyme* and a *corymb*. Define an *umbel*.

5. Explain the following terms as applied to stamens :—*Monadelphous*, *didynamous*, *epipetalous*, *syngenesious*, *hypogynous*.

6. Tell the difference as to the way of uniting the pistil-leaves between a 1-celled pistil with 3 parietal placentæ and a 3-celled pistil with axile placentæ.

7. Explain *superior* and *inferior* ovary. Define a fruit, naming three classes.

8. Distinguish between *herbaceous* and *shrubby* stems. Distinguish between *root* and *rootstock*.

9. Describe botanically the following articles of food :—Tomato, strawberry, banana, potato, sweet potato, carrot, apple, watermelon, peach, peas.

10. Write description and analysis of the flower furnished.

#### LATIN.

Translate :

Hic rex interfectus est scelere filiæ Tulliæ et Tarquinii Superbi, filii ejus regis, cui Servius successerat. Nam ab ipso Tarquinio interfectus est. Tullia in forum properavit et prima conjugem regem salutavit. Quum domum rediret, aurigam super patris corpus, in via jacens, carpentum agere jussit.

Undevicesimo anno post exactos reges, Caius Marcius, Coriolanus dictus ab urbe Volscorum Coriolis, quam bello ceperat, plebi invisus fieri cœpit. Quare urbe expulsus ad Volscos, acerrimos Romanorum hostes, contendit, et ab iis dux exercitus factus Romanos sæpe vicit.

What part of speech is *hic*?

What does *hic* limit?

Give the principal parts of *interfectus est* in the active voice.

Give the principal parts of *interfectus est* in the passive voice.

Give the synopsis of *interfectus est* in mode and voice in which it is found.

Give the accus. sing. and nom. plu. of *scelere*.

Give the dat. plu. of *filia*.

Give the voc. sing. of *fili*.

What does *ejus* limit? Give the rule for it.

What is the antecedent of *cui*?

What does *cui* connect?

What is the construction of *cui*?

Give the principal parts of *successerat*.

Give the synopsis of *successerat* in the mode and voice in which it is found.

Give the gen. sing. and accus. plu. of *ipso*.

What is the construction of *Tarquinius*?

By what case is *in* followed, and why?

What does *et* connect?

Compare *prima*. What does it limit?

Give the construction of *conjugem* and *regem*.

Give the principal parts of *salutavit*.

Give the synopsis of *salutavit*.

What does *quum* connect?

Give the construction of *domum*.

Give the principal parts of *rediret*.

Give the synopsis of *rediret* in that mode in which it is found.

Give the reason for the mode of *rediret*.

Give the reason for the tense of *rediret*.

What are the principal parts of *jacens*.

What are the participles of the same verb?

Give the gender, number and case of *jacens*, and what does it limit?

Give the principal parts of *jussit*.

Give the synopsis of *jussit* in that mode and voice.

Give the construction of *quam*.

What do *exactos* and *dictus* limit?

Give the construction of *bello*.

Give the construction of *plebi*.

---

Give the gender, number and case of *invisus*, and what does it limit?

Compare *acerrimos*. What does it limit?

Give the construction of *hostes*.

Give the construction of *dux*.

Give the principal parts of *factus*.

Give the gender, number and case of *factus*, and what does it limit?



## QUESTIONS

SUBMITTED TO THE

GRAMMAR SCHOOL SCHOLARS FOR ADMISSION

TO THE

HIGH SCHOOL, JUNE, 1882.

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### ARITHMETIC.

1. Divide eight thousand by eight thousandths, and multiply the quotient by eight millionths.

2.  $\frac{7\frac{1}{2}}{12\frac{2}{3}} \times \frac{.004\frac{1}{2}}{7\frac{3}{8}} = ?$

3. A merchant paid \$600 for goods, and sold them at a gain of 20 per cent. He then invested the proceeds in goods and sold them at a loss of 20 per cent. Find the sum gained or lost.

4. What number is that to which if you add  $\frac{3}{8}$  of  $\frac{7}{8}$  of  $\frac{5}{8}$  of itself the sum will be 265?

5. The time past noon is  $\frac{3}{8}$  of  $\frac{5}{8}$  of the time to midnight. Required the time.

6. A cylindrical well 4 feet in diameter and 20 feet deep, is bounded by a vertical wall 1 foot 6 inches in thickness. Find the number of cubic feet in the wall. How many gallons of water in the well if it is  $\frac{4}{5}$  full?

7. What must be my asking price for goods costing \$50 that I may fall 20 per cent. from it, and still gain 25 per cent.?

8. Find the cost of carpeting a floor 18 feet long, 16 feet wide, if the carpeting is  $\frac{3}{4}$  of a yard wide and is worth \$1 $\frac{3}{4}$  per yard.

9. A merchant bought stock at 120 and sold it at 105. Find the loss per cent.

10. If 20 per cent. of the gain is  $\frac{3}{8}$  of the cost, what is the gain per cent.?

11. A circular cistern, 20 feet deep, is 4 feet in diameter at the top and 3 feet in diameter at the bottom. The wall upon the sides is 1 foot 6 inches in thickness. Find the number of cubic feet in the wall. How many gallons of water in the cistern if it is 80 per cent. full?

12. In order to have an annual income of \$2,500, how much must be invested in 5 per cent. stock selling at 110?

#### GRAMMAR.

1. Write sentences containing the *superlative* degree of *late*, *bad*, *near*, *perfect*, *wild*.

2. Write sentences illustrating the different uses of *what*.

3. A verb of the *passive voice* is how formed? A verb of the *progressive form* consists of what? Give sentence examples illustrating each.

4. Parse the *italicised*:—Be so kind as *to loan me a book*.  
James *will study* his lesson, but John *will not*.

5. Parse the *italicised*:—It is better *to study* than *to be idle*.

There is nothing better than *exercise to promote* health. There is no doubt of his being a brave *soldier*.

6. *Correct*:—The rose smells sweetly. The sun shines very brightly. Overcome with fatigue, he laid down to rest. The sun sits in the west. Which is the farthest north, Paris or Quebec?

7. *Correct*:—I intended to have told you I would not be to home. The child cannot neither lay or set still. After a hen has lain a number of eggs, she generally wants to set. Are either of these men known? He don't know no better.

8. Write the principal rules for the uses of the *comma*. Illustrate each rule.
9. Give the rules for the use of *capital letters*.
10. Write a letter of a dozen or more lines, fold the same, and insert it in a properly directed envelope.

## GEOGRAPHY.

1. Define *latitude* and *longitude*. Give the latitude of Washington, Cincinnati, Paris, London, Quebec.
2. Define the Gulf Stream, and state its influence upon the climate of western Europe.
3. Draw a map of the New England States.
4. Name the exports of Russia and Turkey. Name the exports of Oceanica.
5. Upon what bodies of water would a vessel sail in going from Chicago to Odessa?
6. Draw a map of Louisiana.
7. Name the countries with their capitals of Europe.
8. Name the principal islands of Oceanica.
9. Name the bodies of water that border upon Asia.
10. Describe the physical features of Africa.

## HISTORY.

1. Give an account of the discovery of North America by the Cabots.
2. Give an account of Salem Witchcraft.
3. Give an account of the first Continental Congress.
4. Give an account of the arrival of Lafayette and other foreign officers; or:—the Declaration of Independence.
5. Give an account of Burgoyne's Campaign.
6. Give an account of the siege of Yorktown and the surrender of Cornwallis.

7. The Executive Department, and Qualifications of the President.
8. Amendments to the Constitution, how proposed and how ratified?
9. Give an account of the Kansas-Nebraska Bill.
10. State the causes of the great Civil War, and the results.

#### SPELLING.

Trisyllable, dissyllable, sirloin, surfeit, circuit, certain, surcingle. pupillary, capillary, parole, patrol, furlong, architect, archetype. rinse, wince, lacerate, lassitude, occult, oculist, alpaca, tortoise. mortise, lettuce, litany, villainy, osseous, ossicle, ineligible, intelligible, inoculate, molecule, immolate, calipers, sieve, suppletory, suplicate, crystallize, chrysalis, volleyed, irrigate, fuchsia, cursory. scythe, gherkin, measles, weevils, foeman, benefiting, remitting.





1883.]

CITY DOCUMENT.

[No. 17.]

# ANNUAL REPORT

OF THE

## SCHOOL COMMITTEE

OF THE

CITY OF PROVIDENCE:

PRESENTED JUNE 4, 1883.



PROVIDENCE:

PROVIDENCE PRESS COMPANY, PRINTERS TO THE CITY.  
1883.





1883.]

CITY DOCUMENT.

[No. 17.]

# ANNUAL REPORT

OF THE

## COMMITTEE

OF THE

PROVIDENCE,

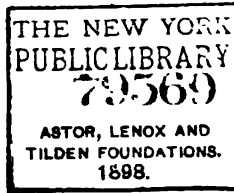
DATED JUNE 4, 1883.



PROVIDENCE :

PROVIDENCE PRESS COMPANY, PRINTERS TO THE CITY.

1883.



IN CITY COUNCIL, June 4, 1883.

UPON THE ANNUAL REPORT OF THE SCHOOL COMMITTEE, for the year  
ending June 30, 1883.

READ, whereupon it is ordered that the same be received and printed.

Witness,

AURION V. CHEVERS, Deputy City Clerk.



# REPORT.

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TO THE HONORABLE THE CITY COUNCIL OF THE CITY OF  
PROVIDENCE :

GENTLEMEN :—The School Committee present this  
their Annual Report for the year ending June 30,  
1883.

Another school year is drawing to a close and it becomes a duty and pleasure for this committee to submit to you our annual report, with such discussions and recommendations as seem both pertinent and salutary to the educational welfare of this city. The relations sustained by this committee to the council are such that it is not necessary to report in detail statistics usually called for in other towns. By reference to the extracts from the quarterly reports of our Superintendent of Schools, published in the succeeding pages, it will be found that the schools of Providence, although their usefulness has been impaired in many instances by an unusual amount of sickness, have made a decided advance during the period covered by this report. It will be found that a judicious and economical use has been

made of such sums as have been expended under our direction and on our recommendation. It will be found that this committee as a whole has been faithful to its trust, and that the teachers as a body, as well as other employees of the school department, have done all that could be reasonably expected of them. Our teachers have worked under many and diverse conditions during the year. Some under the most pleasant and favorable circumstances ; others beset with perplexities and difficulties arising from overcrowded rooms and meagre accommodations, incidental to the rapid growth of any large and prosperous city. In this respect, certain sections of this city are not unlike so many western towns, where, in spite of liberal appropriations and rapid changes and building, the great army of school children continues to increase and overflows any ordinary accommodations which may be provided. Yet, notwithstanding any deficiencies and defects which are generally acknowledged, a careful comparison of the school accommodations, skill and experience of our teachers, and expenditures of the school appropriation in this city with other large towns, proves beyond a doubt that our educational system is not one whit behind the times. In brief, if statistics and a careful study and comparison of facts show anything they prove that our educational system is something to be proud of.

Of the many topics of educational interest which have presented themselves to the attention of your body,

probably the matter of increased school accommodation is not only the most urgent and perplexing but is being thought over, discussed and provided for with as much diligence and zeal as any other municipal interest. It certainly deserves it. It is unnecessary to repeat in this connection facts and figures which have been elsewhere called to your attention. At the last regular meeting, a special committee of three was appointed by our chairman, in accordance with the vote of this committee, to consider the matter of increased school accommodations and report upon the same. This committee, consisting of Messrs. Whittemore, Parkhurst and Monaghan, went vigorously to work. Mr. Monaghan, for reasons given by himself at the first special meeting, declined to act with his associates. The elaborate and carefully prepared report signed by the first two gentlemen was read and discussed at three special sessions of the school board, held for this purpose. After considerable discussion, it was plainly evident that this general committee was strongly of the opinion that the question as a whole demanded the utmost diligence and speedy action, both on the part of the common council and the school board.

In a report, like the one furnished by this special committee, in which they saw fit to make a general and specific review of almost our whole school system, the real estate of which alone costing \$1,150,000 with a present valuation of \$950,000, exclusive of land and

school buildings having a seating capacity of 14,000 pupils, it would not be at all strange if errors of statements did creep in to weaken its general effect. In a report, like this, prepared in so short a time by busy men, which sweeps in its comprehensive survey over our whole school system, from the present or proposed location of our school buildings to their ventilating apparatus; from proposed or necessary increase of school accommodation extending over a large territory, to the inspection of a great number of offensive cellars and outbuildings; from a great variety of statistics concerning our school population and its accommodation, which, if verified by yourselves, must needs demand your thoughtful and speedy attention, to statements concerning the spread of contagious disease, in a report of this kind, we repeat, it would not be at all strange if you should detect errors and mistakes. You may even think that too much emphasis is laid on topics where none is called for at present, and that possibly the report is pervaded with a spirit of fault-finding, that the weak points of our school system have been emphasized more than the facts will warrant and a disposition manifested to ignore the educational work now in progress or under discussion by yourselves. The text of the report is now before you for your consideration. We bespeak for it a respectful and candid hearing.

Our special committee reported in favor of sixteen recommendations, fifteen of which have been referred to

you. It is to be hoped that you will give them that careful consideration which they deserve. If some of them suggest sweeping and radical changes and seemingly unnecessary expense, it is to be hoped that they will not be rejected until the merits of each resolution have been impartially and thoroughly discussed. It is not for one moment to be supposed that the interests of the common council and school committee should not harmonize. It is not to be supposed that these two bodies, made up of representative citizens of this goodly city, should antagonize each other, much less when any educational matter of necessity or importance is under discussion. On the contrary, we should be moved solely by an honest and steadfast aim to promote and maintain the educational welfare of this city. To afford ample school accommodations; to equip our schools with good teachers; to foster an ambition for a decent education; in other words, to help make honorable and capable men and women out of the rising generation, so far as well equipped schools can do it, should be our constant aim and endeavor. This is something over and above all petty and selfish feelings of partisanship, jealousy, or personal bias. Moved by this feeling of educational patriotism, we cannot but work together in harmony for the common good. If there was ever need of such harmonious action it is just now when this important and urgent question of increased school accommodation must be met. Over and above any inac-

curacies of statements or statistics, or detailed mention of unimportant matters in this report of our special committee, the essential facts are universally admitted: *i. e.*, that this city must have increased school accommodations, notably in certain sections specified in the several resolutions. The several district committees should be held to a strict responsibility concerning a fair statement of the particular wants of their several districts. If we have been correctly informed they have not shirked the responsibility, but have worked in harmony for the common good.

Next to the question of school accommodation the subject of illiteracy in this city and State naturally attracts our attention. The general assembly has just passed a compulsory educational bill which must in a great degree correct this evil. Indeed, there was pressing need of such legislation. In a bulletin recently published by the census bureau, there are some alarming and humiliating facts. According to this, Rhode Island has the largest proportion of illiterates of any State in the north; her percentage of all who are ten years of age and over, being 11.2 against an average of 5.9 for all other northern States and territories. Of foreign born illiterates, we have 27.3 per cent. This is a larger proportion than is found in any State or territory in the Union. The proportion who cannot read in Rhode Island ranges from 50 per cent. greater than it is in Massachusetts, to 125 per cent. greater



than it is in Maine. Again we are behind other states in reference to the education of our native population. The percentage of "native white persons ten years of age and upwards," who cannot write is 2.9, a rate double that of the rest of New England, and three times as large as that of Connecticut, and four times that of Massachusetts.

The annual school census of Providence, required by the laws of the State, has been completed, and the statistics have been returned to the Commissioner of public Schools. Some of the statistics are at once alarming and humiliating.

Perhaps the most important information obtained by this census, is in the column showing the number of children of school age in the city who did not attend any school any time during the year 1882. The number of this class is *four thousand seven hundred and seventy-five* (4775) or 21.64 per cent. of all the school children in the city. The proportion of children who did not attend any school during the year varies, of course, considerably in different portions of the city, the differences depending upon the character of the population, and upon the local facilities for obtaining work for children.

The following table shows the number of school children, and the number and proportion who did not attend any school during the year, in each ward and in the whole city :

| WARDS.          | Whole<br>No. School<br>Children. | Number not<br>in School | Percentage<br>not in School |
|-----------------|----------------------------------|-------------------------|-----------------------------|
| I.....          | 2,649                            | 426                     | 16.08                       |
| II.....         | 691                              | 121                     | 17.51                       |
| III.....        | 1,789                            | 375                     | 20.96                       |
| IV.....         | 743                              | 83                      | 11.17                       |
| V.....          | 1,587                            | 353                     | 22.24                       |
| VI.....         | 902                              | 195                     | 21.61                       |
| VII.....        | 1,831                            | 393                     | 21.46                       |
| VIII.....       | 2,760                            | 649                     | 23.51                       |
| IX.....         | 3,889                            | 650                     | 16.71                       |
| X.....          | 5,221                            | 1,530                   | 29.30                       |
| Whole city..... | 22,062                           | 4,775                   | 21.64                       |

The smallest proportion of children not attending any school is 11.17 per cent., in ward four; the largest proportion is 29.30 per cent., in ward ten. In the whole city the proportion is 21.64 per cent. It seems, therefore, that, of all the children in the city between the ages of five and fifteen years inclusive, *more than one in every five did not attend any school* a single day during the year 1882.

The increase in the number who attended the public schools, from 1879 to 1883, is 1,900, or 16.90 per cent., but the increase in the number of those who do not attend any school is 1,816, or 61.37 per cent. in the same time, a proportional increase nearly four times as great.

The subject of illiteracy and compulsory education has been, again and again, discussed in educational publications of every kind, and by the public press. It has

been repeatedly discussed by the educators and the newspaper press of this state. The arguments for and against legislative action in this direction are familiar to every intelligent person. There is no need to repeat them at this time. Suffice it to say that good citizens generally unite in the opinion that it is high time for the state of Rhode Island to stand in the place of the parent, and compel her children to secure the simplest rudiments of education. Why and wherefore this state stands so low on the list of illiteracy is no secret. The nature of our leading industries is such that this burden is forced upon us. The general assembly, however, has passed a compulsory educational bill, which will go into effect in a few months. So far well and good. The next thing will be to enforce it thoroughly and impartially. Local prejudices and influences should be powerless to hinder the full and just operation of this law.

Recognizing the urgent need of doing something to neutralize the baneful effects of flash literature, and at the same time to inspire their pupils with a desire to read a healthier and more nutritious class of books, most of our grammar school-masters established some years ago their school libraries. What has been done is known to all interested in the matter. This good work has steadily advanced during the past year. New and valuable additions of books have been made, and arrangements perfected, through the courtesy of its accomplished librarian, Mr. W. E. Foster, to make use of

the public library in connection with school work. In brief, what is called the "reading hour" is one of the most useful help in the grammar school course. In this respect some of our schools will compare favorably with any in the country. The grammar school life of the average boy or girl is the most critical in his educational career. This is the time when the fever for all unlikely things runs high. This is the time when the habit of smoking cigarettes, chewing tobacco, using profane and vulgar language and reading flash books and papers is formed. So, too, it is the time when the full energies of the wise teacher are bent to teaching his pupils to forsake the bad and foolish, and cleave to the good and profitable. We should see to it that such teachers, who spare no pains to extend the scope of their work beyond the petty limits of a few rules in arithmetic, or the recitation of a little grammar or geography, are supplied with plenty of working tools in the shape of inexpensive editions of the English classic authors.

In the absence of any formal report of the Committee on Health and Ventilation, it may not be amiss to allude briefly to the question of school hygiene, a subject which is attracting to-day the attention of our ablest educators. It is well for us to remember in the *first* place, that school sanitation is a broad subject. Broad, because it includes almost everything of importance in our vast educational system,—the location of the future

school building ; its general and specific structure ; number and dimensions of its doors, windows and rooms ; its ventilating and heating apparatus ; the spread of contagious diseases ; the type of text-books and maps,—in truth, it is a broad subject. *Secondly*, it is an important subject. It concerns the future success of our rising generation, whether in the business or professional walks of life. It concerns our future prosperity as a nation, and our happiness in the domestic circle. It is intimately associated with the educational welfare of our families, our communities, our State, and with the Nation in general. Upon a proper and wise understanding of the laws of school hygiene, and their practical application, depends in a great measure, the physical and mental health of our children,—our future citizens. *Thirdly*, it is a practical subject. What can be more so ? It is intimately blended with our prosperity and happiness as individuals, as a town, as a state, and as a nation. Ignorance or indifference to the hygienic surroundings of the great army of school-children may bring contagious diseases with all their attendant results, into our homes. Undue straining of the eyes, because of imperfect light, may result in temporary or chronic diseases of these important organs. Careless ventilation, foul out-buildings, lack of cellar drainage, or sitting in the school-room with wet feet or clothes, and our child may come home to be stricken down with pneumonia or typhoid fever. A score of seemingly unimportant things

which happen every day in every school-room may produce serious consequences. In truth, no subject connected with our educational system can be more comprehensive, more important, or more practical. Viewed in this light, as it is to-day by advanced educators, it is no wonder that the question has been much discussed in all its bearings.

Whereas, fifteen or twenty years ago, little was said or written of hygiene, to-day, the study of school sanitation goes hand in hand with public sanitation. How to prevent and ward off the evils which beset our physical surroundings is the problem for sanitarians and scientists to solve. How to improve the hygienic conditions of the school-room is the problem to which our attention is very properly called on every side. Our wisest medical men, our leading scientists, our ablest teachers are busily engaged in working out a solution.

The practical result of this agitation should be the enactment of laws establishing the office of medical inspectors of schools. We have inspectors of fish, lime, saleratus, pork, and kerosene, why not medical inspectors of schools? They have recently appointed such officials in France. Much is expected of them. They must be fully qualified practitioners of medicine; must visit all the schools twice a week; see to the drainage, lighting, warming and ventilation of the buildings; report on the health of any of the pupils who show signs of sickness;

give warning in cases likely to prove contagious ; give advice on disinfecting, and various other details of school health. In the city of Lyons, a town in France about the size of Boston, they have eight medical inspectors of schools, appointed for six years, and who cannot be removed or re-elected. Something is being done in this direction in several states of the Union. Boston has agitated the question for several years.

The Ohio Legislature has passed an act authorizing and requiring boards of health to make semi-annual sanitary inspections of all schools and school-buildings within the limits of each corporation. This sanitary-inspection bill, which became a law March 10, 1883, is the result, in part, of the agitation in the city of Cleveland about a year ago. The law is a general one, and is applicable to all schools,—public, private, and parochial.

We are not yet prepared to advise any recommendation in this matter. To enlarge the powers and duties of the Committee on Health and Ventilation would certainly be an initial step in the right direction.

The time seems most appropriate to call your attention to the practical importance of school hygiene. Never before has sickness made such sad havoc with our school population as it has during the past year. Whether or not lack of proper school sanitation has been an important factor in this problem, we are unable to say. Accepting the statements as brought to your

attention in the report of the special committee, you must needs find it a topic of diligent inquiry. This city cannot afford to be careless or negligent in the sanitary equipments of its schools. Our streets are the cleanest of any large city in the country. Let it be our best endeavor to make our schools and school-buildings equally clean and neat.

Lack of space is the only reason why we have omitted special mention of our evening schools, a part of our school system equally worthy of support and attention as any other. That our evening schools are successful, and an educational power for good in this city, you have only to read the report of the sub-committee, published on another page, to be convinced that no more judicious expenditure of the city's money is made, than for educating those deprived of privileges in the day schools, because of poverty or lack of opportunity in earlier years. The recommendations of the special committee on this matter are particularly commended to your attention.

Respectfully submitted,

|                      |   |                   |
|----------------------|---|-------------------|
| ALBERT F. BLAISDELL, | } | <i>Committee.</i> |
| JAS. CHAS. MONAGHAN, |   |                   |
| GEORGE S. BROWN.     |   |                   |



# · TRIENNIAL REPORTS

OF THE

SUPERINTENDENT.

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PROVIDENCE, December 22, 1882.

*To the School Committee of the City of Providence :*

GENTLEMEN :—Various questions relating to the welfare and efficiency of our schools are now being discussed, both by teachers and in our educational journals, with an unprecedented earnestness and ability. Thoughtful men are beginning to inquire more seriously, what should be the aims and purposes of our public schools; and by what means and agencies can their power and efficiency be increased? It is now almost universally conceded that the continued prosperity of every community mainly depends upon the kind of training and culture its youth are receiving.

The rich fruitage of the earth, in all its variety and beauty, is far less dependent for its perfection upon a wise and assiduous culture than is the growth of the virtues and noble qualities that constitute and adorn true manhood. The highest aim of education should ever be to develop and to bring out in their strength

and vigor all that is truly great and good in the youthful mind.

It is evident that education must begin and be continued in the family. Parents are the natural educators of their children. The duty and the responsibility is theirs. Our public schools can supply, only in part, what children have a right to demand of their parents.

The indifference of many parents in regard to this subject is deeply to be lamented. They have no higher duty in life, no greater responsibility; and they can leave no richer legacy for their children.

There is often manifested, in early childhood, a very marked and decided taste and talent for some particular trade or profession. When this is evident, it should be developed and cultivated as far as the ability and circumstances of parents will admit; as few succeed in life who are compelled to engage in any occupation which is decidedly repugnant to their feelings and tastes, and for which they have but little or no capacity. Parents often err in not early deciding for their children or in aiding them to decide into what sphere of active life they shall enter when of suitable age.

There is in many youths a natural repugnance to labor and toil. Their desires and propensities are often impulsive and are ever urging them to seek present gratification regardless of the future. When these are manifestly dominant, they should be checked and corrected by the wisest and gentlest means. It is not wise

to attempt to eradicate entirely any bias or taste that seems to be deeply rooted in nature, but an effort should be made early to give them a right direction.

Not a few boys leave our schools without any definite plan for the future. They seem to wait for some lucky turn of fortune to present itself, by which they may gain the means of a livelihood without manual labor. Their chief object of pursuit is pleasure and the gratification of sense; amusement and recreation of some kind, and not unfrequently the lowest, they regard as the only purpose and aim of life, and these they pursue with such passionate eagerness as to lead to the contracting of vicious habits and oftentimes to dishonesty.

It is evident that an industrial education, and this should not be confined to boys, which has special reference to future occupation, should hold a prominent place in every system of instruction. The importance of this particular mode of teaching has been too long overlooked and neglected.

While it may not be true that too many youth enter our higher institutions of learning, it is undeniably true that many a youth, through the ambition of parents, or from a strong disinclination to labor, are forced to enter upon a college course who have no studious habits, and no talents that will enable them to succeed in any of the liberal professions. And not a few seek the honors of a college rather than its practical wisdom.

When such mistakes are made, and they are not unfrequent, it is difficult, if not impossible, to remedy these in after life. Far better would it have been for all such, and more honorable for life's work, to have engaged in some mechanical trade or in some calling for which there was no lack of capacity or taste.

The insubordination that sometimes manifests itself in our colleges almost always originates with those who have little or no personal interest in their studies, no high aims in their education, and who do not appreciate the privileges they enjoy.

There is often manifested a disposition, even by some who claim to be true friends of education, to disparage our schools and to pronounce them a failure. If this be true, the sooner they are closed the better. It is, however, certainly incumbent upon those who make this grave charge to substitute something better in their place, more efficient and practical in advancing the cause of human progress and civilization. If there are means and agencies of greater power and better adapted to elevate our public schools yet unemployed, it is the bounden duty of those possessing this superior wisdom to make them known, that we may not grope longer in hopeless ignorance.

It is one thing to form an ideal conception of what a work of art ought to be, but it is a very different thing to go into the quarries and extract the rough material

and to form and polish it in accordance with this high ideal.

All impartial criticism, whose aim is to detect defects and faults, is invaluable and cannot be praised too highly, if it is also able to point out the means by which these can be successfully corrected.

It is admitted and lamented that our schools are not yet accomplishing all that we desire. But few are aware of the difficulties and obstacles that have to be overcome. The public sentiment should be enlightened, not only in regard to their true value and importance, but also as to the best means by which they can be improved.

It is evident that we are sometimes attempting to accomplish too much in a given time. The simple elements of knowledge, which are fundamental, are passed over too rapidly before they are clearly apprehended, so that they may be intelligently applied to practical results. The field of knowledge is so vast and constantly increasing, and so attractive that ambitious teachers, urged on by equally ambitious parents, not infrequently, give undue prominence to that which is showy and fashionable, rather than to that which is truly valuable and substantial. In no course of instruction, however, should the ornamental take the precedence of that which is useful and practical.

It is also sometimes urged against our schools that there is a neglect or deficiency in moral and religious

instruction. This, in some instances, may be true. But every conscientious and faithful teacher, who has a deep sense of his duties and responsibility, will impress upon his pupils the sublime truth, that there is a Moral Governor who rules and controls the destiny of man, and is ever taking cognizance of human actions; and that there is an immutable distinction between right and wrong; and especially will they enforce, by example as well as by precept, with all their eloquence and power, the equally important truth, that without character, founded upon a profound reverence for God and truth, and adorned with the virtues of purity and moral rectitude, the highest intellectual culture will often end in disappointment, if not in disgrace.

The earnest and faithful inculcation of these truths by each teacher in our public schools ought not and cannot consistently be repudiated in any community calling itself Christian. Such instruction should be very brief and pertinent, and need not consume much time.

It cannot be too often urged nor too emphatically impressed upon every teacher that there is a marked difference between education and knowledge. Education, in its true sense, is the developing and strengthening all the faculties of the youthful mind in perfect harmony, so that none be dwarfed or overstrained; while knowledge is simply furnishing facts and truths as materials and elements for rational thoughts.

One of the first, if not the highest aim in education, should be to lead a child to think and reflect, to govern and control himself. Until this is learned, but little that is valuable is accomplished. The primary truth should be persistently taught in every school, that self-reliance and self-control form the only substantial basis of a noble character, and that it is upon the energy of will, developed and invigorated by careful training, and wisely directed, that success in life mainly depends.

While some parents are apparently indifferent in regard to what constitutes a true education, there are others often so ambitious that their children may excel in almost every branch of knowledge, or that they may complete their school course as early as possible, urge them on beyond their strength and capacity. They do not seem to be fully aware that to overtask the mental capacities of children, especially of girls, and thus to impair their physical energies is not only unwise but is often suicidal.

In addition to school work, which is often too great for nervous temperaments, too much time is spent out of school in reading thrilling tales of fiction, which excite unduly the imagination and exhaust the brain. It is undoubtedly true that physical culture and training are often sadly neglected. The fundamental laws of health cannot be violated with impunity. There is no more important nor evident truth for all pupils to learn than

that after severe mental labor, the brain, to prevent exhaustion and disease, demands regular periods of long and calm repose. An education that is gained by the loss of health is purchased at too costly a sacrifice. It is like weaving garlands of roses to deck the early bier.

One of the most important additions that can be made to our public schools, and which would widely extend their influence, is the establishment of one or more industrial and training schools for girls.

A large class of girls, and some of them quite young, leave our schools every year without any special training for any remunerative occupation. To meet the wants of this deserving class, which are imperative and pressing, we need a school where girls can spend one or two years, and be taught not only the skillful use of the needle in all kinds of sewing and the use of sewing-machines, but also to cut and fit garments. Valuable instruction also might be given in many household duties. Thousands of dollars are paid every year for garments made out of the city, which might be given to our young women if they had been skillfully trained for their work. Justice, human sympathy and every consideration that can touch the benevolent heart and prompts to the elevation of woman, unites in demanding for our girls such privileges of education as will prepare them for some respectable and remunerative occupation when they leave school.



The number of girls who are preparing themselves to be teachers is much larger than can find permanent employment in the city. Besides, to become a successful teacher certain natural characteristics are requisite—such as aptness to teach, earnest devotedness to their work, a deep sympathy with dullness, an unbounded patience, and, specially, that charity that endureth all things, hopeth all things and is not easily provoked. These higher traits, which consist in a rare combination of the intellect and heart, no preparatory training can supply.

I am rejoiced to learn that a society has been organized to prevent cruelty to children. I trust that this association will command the kind sympathy and liberal support it so richly deserves, but while its active members are extending their laudable efforts to abate an evil of no ordinary magnitude, I sincerely hope they will not overlook or ignore a far greater evil, which is constantly increasing. Will they not, and ought they not, to make diligent inquiry and examination so as to ascertain which is the greater cruelty, the infliction of bodily pain and suffering, which is but temporary, or the starving the intellect and impoverishing the heart, in depriving so many of our youth of their dearest birthright, in permitting them to grow up in ignorance of the true aim and purpose of life, utterly regardless of their duties and responsibilities, and forming characters under the vicious influences by which they are

surrounded, that will inevitably lead to misery and disgrace. As the noblest work in which man can be engaged is to relieve human suffering, is there among the many duties that appeal to the tender and sympathetic in heart any that can make a stronger claim than this?

In previous reports I have repeatedly referred to the fact that there is a very large number of our youth not attending any school, but are growing up in ignorance. The magnitude of this increasing evil I have endeavored to set forth in as significant and forcible language as I could command, showing that it is not only one of the greatest obstacles and hindrances we have to encounter in elevating our schools to their highest excellence and powers, but is also one of the most prolific sources of pauperism and crime, but the fear of intrenching upon parental rights seems to have produced in the public mind such an apathy in regard to the whole subject, that no array of undisputed facts can move, and no appeal to human sympathy can overcome.

It requires not the gift of prophecy to foresee what will be, unless checked, at no distant day, the blighting influence of such a dominant element in society, so destructive of social order, and paralyzing the best efforts of human industry. That this evil is increasing, the records of our police courts and the State farm afford abundant and irresistible evidence.

Our schools have suffered severely the past term from sickness. A larger number of teachers and pu-

pils have been sick than in any previous time in the history of our schools. There has also been a very large increase in the number of pupils admitted without lessening the absentees.

We have registered in all our schools upwards of nine hundred more than in the corresponding term last year, and twelve hundred and ninety more than were registered last June. In consequence of this increase many of our schools are very uncomfortably crowded, not only impairing the health of pupils, but detracting largely from the value of the labors of the faithful teachers. It is certainly neither wise nor humane to crowd seventy or eighty, and sometimes a hundred pupils into a room designed for fifty, and without a recitation room, where two classes must be heard at the same time, or one class must recite in the cold entry.

A new building for intermediate and primary schools is needed in the first ward, in the neighborhood of Camp street; one in the tenth ward, to relieve the school on Chalkstone avenue and Admiral street, and one in the ninth ward, to relieve Warren, Potter's avenue, Public and Penn street schools. Most of the primary schools in the third district are also crowded, notwithstanding the new house on Penn street, which is quite too small.

The whole number of pupils registered the past term is 14,171; 545 have been received into the high school; 3,884 into eleven grammar schools; 3,358

into thirty-five intermedaite and 6,384 into thirty-eight primary schools.

Respectfully submitted,

DANIEL LEACH, Supt.

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PROVIDENCE, April 6, 1883.

*To the School Committee of the City of Providence :*

GENTLEMEN :—There are no subjects of special interest to be presented at the present time. Our schools are, with a few exceptions, in a very satisfactory condition. The percentage of absences, however, caused by sickness and the severity of the weather, has been larger than usual, even in winter terms.

Our teachers have been earnest and faithful in their arduous and responsible work, and are entitled to more sympathy and a higher appreciation than they often receive. None but those who have had experience in the school-room can form any adequate conception of the exhausting labors and trials of an earnest teacher. There is no responsible position in life where there are so many perplexities, so many difficult questions to decide promptly, requiring such perfect self-control, as well as consummate wisdom, as in the office of a teacher.

There is, however, a marked difference in our best

and poorest schools. While some have attained a very high degree of excellence and efficiency, and will not suffer in comparison with the very best in any city, there are others that may yet be improved. It is unquestionably true that the character of a school will depend mainly upon the skill, the quickening power and energy of the teacher; yet there are local circumstances and conditions that should be taken into the account in forming a correct judgment of every school. The influence exerted by the cordial sympathy of parents with teachers and their active coöperation, cannot be overestimated. When this aid is entirely wanting, the very best teachers will secure but a partial success.

It is a great mistake to suppose that the legitimate work of a school is confined to the school-room. Our best and successful teachers spend many hours out of school in completing their work, and in special preparation for the future.

There has been a decided improvement in the discipline and government of our schools. Corporal punishment is now seldom resorted to by our best teachers, except in extreme cases. The highest qualification in any teacher is to be able to gain the confidence and respect of his pupils, as well as the full sympathy of the parents.

The cause of popular education is now awakening in the public mind a deeper interest than ever before; and our public schools are being subjected to a rigid

criticism, both by friends and foes. The question is repeatedly asked, what can and what ought our schools to accomplish, and what are the best means and methods to be employed? These questions are now being ably discussed, not only in our educational journals, but in the frequent gatherings of teachers. Old methods are often depreciated as inefficient and wholly inadequate, and methods radically new are proposed and advocated so confidently, and with such eloquence, as often to mislead the young and inexperienced. It is a significant fact that most of these new theories have originated with those who have had a limited experience in the school-room. It is now universally acknowledged that in all scientific investigations, theories, to have any permanent value, must be supported by well attested facts. It is not a mark of the highest wisdom to decide what ought to be done, but rather how it can best be done in all ordinary circumstances.

While it should be the constant aim of every teacher to adopt the very best methods that have been carefully and fully tested, young teachers, especially, should be cautioned to avoid all radical changes and extremes. They should neither be confined to a fixed, monotonous routine, which is often dull and lifeless, neither should they be ever seeking something novel to attract notoriety. Frequent experiments with the youthful mind are often hazardous in the extreme. There is no maxim of more profound wisdom that can be impressed

upon every young teacher than to "prove all things and to hold fast that which is good."

One of the tendencies at the present time, to which I have frequently alluded, and to which ambitious teachers are constantly liable, is that they attempt to accomplish too much in a given time. Young teachers, especially, are not easily convinced that their reputation and success depends far less upon the amount of knowledge that their pupils acquire than upon the habits of accuracy and thoroughness which the pupils form.

It has been repeatedly enjoined in previous reports that instruction should always be adapted to the age and capacity of the pupils. It is evidently unwise to attempt to teach in a primary school for the sake of show what can be taught in less than half the time, and will be far better understood in an intermediate school.

Frequent reviews of what has been passed over are not only necessary to all successful teaching, but each review should be accompanied with new illustrations, showing their application and relation to all subsequent acquisition. When this is neglected, some of the simplest elements and principles will be forgotten, even by advanced scholars. All the studies of the primary and intermediate schools should be reviewed in every grade in the grammar schools, and in the high school especially, should all previous studies be thoroughly and carefully reviewed. It cannot be too emphatically

stated that success in every sphere depends not so much upon the extent and variety of knowledge, as upon its certainty and reliability.

Ornamental education may be regarded as one of the choicest luxuries to be indulged in by those who have the leisure and the means to enjoy it; but the stern realities and responsible duties of life require that which is more useful and practical.

It is evident that our primary schools should receive our first attention, and should be under the charge of our ablest and most experienced teachers. The impressions on the youthful mind, and the habits then formed are the most permanent, and have an abiding influence in deciding the mental and moral taste of the pupils. It is exceedingly difficult to eradicate from the mind what has been early and deeply impressed. It is, therefore, an unwise and mistaken policy to appoint our inexperienced teachers to begin a work of such vast importance. A wise master builder never makes the mistake of employing his apprentices to lay the foundation of a noble superstructure, lest he should, to his deep regret, find that he was building on cobble stones, or on an insecure foundation.

Our primary schools would be very much improved, as I have often and emphatically recommended in previous reports, were all our school buildings so arranged that the lowest classes, when they are beginning to read, could be taught by themselves in a convenient and suit-



able recitation room. When the youngest pupils are obliged to listen to the advanced classes when they are reading, they very often learn to repeat sentences as well without as with a book. This, as every experienced teacher knows, is a serious hindrance to the progress of our lower classes. As a special committee has made a full report, with recommendations of what they deem necessary for our schools, there is no occasion for me at this time to refer to that subject.

The whole number of pupils registered in all our schools the past term is 13,121,—1,050 less than were registered in November, and 478 more than were admitted in February, 1882. Of this number 479 have been received into the high school, 3,968 into eleven grammar schools, 3,140 into thirty-four intermediate, and 5,534 into thirty-eight primary schools.

Respectfully submitted,

DANIEL LEACH, Supt.

April 6, 1883.

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PROVIDENCE, June 29.

*To the School Committee of the City of Providence :*

GENTLEMEN :—In submitting my last and final report, I desire to express most cordially, my grateful acknowledgements for the support, encouragements and kind

sympathy that I have very generally received from the committee in the discharge of my very onerous labors.

Very few are fully aware of the responsible and arduous duties of the office of the Superintendent; of the difficult and perplexing questions, involving the rights of parents, pupils and teachers, that have to be promptly decided.

During the last twenty-five years the work of the office has more than doubled.

I desire, also, and I cannot do it without emotion, to extend to all the teachers of the public schools of Providence, my most grateful acknowledgment for their kind sympathy, their friendly greetings and their cheerful and active coöperation in the great work in which we have been engaged; and I take great pleasure in saying that our teachers, with but few exceptions, have been earnest and faithful in their work, very cheerfully carrying out the instructions they have received. While my official relations with the teachers, which have been so pleasant, will now close, the remembrance of their uniform kindness will ever be cherished as the fondest recollection of my life.

The views of the superintendent in regard to the best means and agency for elevating our schools to the highest standard of excellence have been frequently submitted in previous reports.

The first truth, which is paramount to all others and which should have a deep and abiding impression on

every friend of humanity, is that the continued prosperity and social order of our city depends far more upon the efficiency and power of our public schools than upon any other department of our municipal government. Let our schools suffer and languish for the want of a liberal support, intelligent supervision, and competent and faithful teaching, and how soon will our varied industries be paralyzed and disorder and misrule be rife in our streets?

In the discussion of the various topics relating to the methods of instruction, the superintendent has endeavored to enforce upon all teachers the primary truth that the art of teaching, the first and the highest of all arts, is progressive, and that all earnest and faithful teachers should not only avail themselves of the successful experience of others, but while they are securing all the improved methods, both in teaching and in discipline, they should be extremely careful not to experiment with the tender minds of their pupils, nor to adopt too hastily the new theories of radical reformers.

The superintendent has repeatedly urged upon teachers to guard against the increasing tendency of crowding the minds of their pupils and of attempting too much in a given time. This pressure is often very great. The mass of our youth demand that kind of knowledge that can be skilfully used and practically applied when they leave school, while that which is

showy, superficial and ornamental should be left for those who desire it and are willing to pay for it.

The superintendent has also often called the attention of teachers to the important distinction between education and knowledge. Education, in its true sense, is the developing all the youthful faculties in harmony, imparting to them strength and vigor by judicious exercise; while knowledge furnishes the mind with facts and truths as material for the thinking and reasoning powers to compare and combine into valuable and beautiful products. The chief and highest value of knowledge consists, not in its extent and variety, but in its clearness, its accuracy, and is so intimately related to previous acquisition as to produce the best practical results.

As my last and emphatic advice, I would repeat what I have said in former reports: That the first and highest aim of every teacher should be to lay the foundation of a pure and noble character. This should constitute an important part of his daily work. Truth and duty cannot be separated in any true and complete education.

Knowledge, to have any permanent value, must be wrought into character and form one of its essential elements. This is the only possession that survives man's transient being. Every other possession, whether of wealth or fame, is evanescent and fleeting, always subject to continual fluctuation and disappointment. But character, pure and ennobling, bearing the impress of

its divine original, however humble may be its possessor, is as abiding and unfailing as eternal truth.

As no action or notice was taken of a recommendation made in a recent report, I deem it of sufficient importance to repeat emphatically the recommendation then made:

“One of the most important additions that can be made to our schools, and which would widely extend their influence, is the establishment of one or more industrial and training schools for girls. A large class of girls, and some quite young, leave our schools every year without any special training for any remunerative occupation. To meet the wants, which are imperative and pressing, of this deserving class, we need a school where girls can spend two or more years, and be taught not only the skillful use of the needle in all kinds of sewing and in the use of the sewing-machine, but also to cut and fit garments. Valuable instruction might also be given in relation to the varied household duties. Thousands of dollars are paid every year for garments made out of the city, which might be given to our young women if they had been skilfully trained for that work. Justice, humanity, sympathy and every consideration that can touch a benevolent heart and prompt to the elevation of woman, unite in demanding for our girls such privileges of education as will prepare them for some respectable and remunerative occupation when they leave school.

“The number of girls who are preparing themselves to be teachers is much larger than can find permanent employment in our city. Besides, to become a successful teacher, certain natural characteristics are absolutely requisite. These higher traits and qualifications which consist in a rare combination of a cultured intellect and heart, and constitute the teacher’s moral power, no preparatory or literary training can supply.”

An ability to hear recitations, to correct mistakes and to enforce school rules, which are often unnecessary, does not constitute, in any true sense, a teacher. There must be an abiding impression of responsibility, a kind sympathy, and more than all and above all, a quickening influence going forth from the intellect and the heart that will awaken and stimulate the native powers of every class of minds.

Just in proportion as a teacher gains in moral power, which he must illustrate by his own example as well as enforce by precept, will corporal punishment and severe discipline in school be rendered unnecessary.

It gives me great pleasure to state that our General Assembly, at its session in March, enacted a truant law; the object of which is to bring into our schools hundreds of children in our city, now growing up in ignorance. Such a law has been earnestly recommended and advocated by the superintendent for more than twenty-five years. That there should be some compulsory power judiciously exercised to check the rapid in-

crease of ignorance, must be apparent to every friend of youth. Great wisdom, however, as well as humanity, is required in the enforcement of the law, that the rights and duties of parents be not unnecessarily infringed upon. If judiciously exercised, we may anticipate the most favorable results.

In closing my official connection with the public schools of Providence, I am gratified in being able to say, after a careful examination of all the grades, that our schools are, with a few exceptions, in a most excellent and satisfactory condition. This must be apparent to all who will without prejudice examine the school work.

The written examinations for the admission to the high school are now in the office of the superintendent. Parents and friends of our schools are invited to examine them, that they may become familiar with what our schools are now doing.

The whole number of different pupils whose names have been registered in all our schools the past year is 15,427, nearly 1,000 more than were registered the previous year.

During the past term there have been received 451 into the high school, 3,890 into eleven grammar schools, 3,071 into thirty-five intermediate schools and 6,068 into thirty-eight primary schools.

Respectfully submitted,

DANIEL LEACH, Supt.

## REPORT ON EVENING SCHOOLS.

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*To the School Committee of the City of Providence:*

The standing committee on evening schools present this their annual report for the year 1882-83.

Pursuant to a vote of the general committee, and by authority of the city council, your committee, on the evening of October 16th, opened nine ordinary evening schools, which were continued for nineteen weeks at the following places, viz.:

In the school houses on Meeting, Orms, Oxford, and West River streets, at the chapels on America and Harrison streets, in the ward-room at the 5th police station on Richmond street, in Unity Hall, Olneyville, and in the old Baptist church on Wickenden street.

The several schools were located in the same places as last year, with the exception of the one on Richmond street, which formerly had been held at the school-house on Elm street.

Your committee selected and nominated one hundred



and fifteen teachers, who were duly appointed by the committee on qualifications.

The whole number of scholars registered was 1,606.

The average attendance was 825.+

Amount paid for salaries \$10,797.00.

It will be noticed that the number of scholars registered is some what less than for the year 1881-82. This decrease in numbers may be accounted for, in a measure, by the instructions given to the principals, not to count every new scholar, until he had proved by his regular attendance that he was entitled to be considered a member of the school, also in several instances the schools were *seriously* interrupted by their rooms being used as ward-rooms for election purposes.

It is with no small degree of satisfaction, that your committee have to report, that no serious cases of insubordination have been reported to them, and that the discipline and order of the schools have been all that could be expected.

It is worthy of mention to the credit of evening schools, as to their importance, that one principal reports an attendance in his school during the past term of *forty-two* scholars who were more than *twenty-one* years of age, and a number of instances where husbands, wives, and their children attended at the same time.

Your committee recommend that application be made to the city council for the establishment of ten ordinary

evening schools for a term of seventeen weeks the coming winter.

All of which is respectfully submitted for the committee.

FRED. I. MARCY, Chairman.

FANNY PALMER,  
JOSEPH E. C. FARNHAM,  
AMOS M. BOWEN,  
DANIEL A. HUNT,  
EDWARD B. KNIGHT,  
EDWARD D. BASSETT,  
FRED. I. MARCY,

*Evening School Committee.*

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## WRITTEN EXAMINATIONS.



# WRITTEN EXAMINATIONS.

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## HIGH SCHOOL. CLASSICAL DEPARTMENT.\*

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### GREEK.

#### I.

1. Name the three principal dialects of the Greek language. Of what was the Attic a branch? What is meant by Hellenistic Greek?

2. Write *οἶδα* and *ῥῶδῃ* with capital initials. Write in Roman letters *Κελαιναί*, *Θρηῆς*, *Ἀρπυιαί*, *Ἀβουλίτης*, *Ἀπάμεια*, *Οἰκουμένης*.

3. Name the semi-vowels and give their subdivisions.

4. Explain the changes of *ε* and *ο* by formation and by vicarious protraction. Explain the protraction in *νικήσω*, *περάσω*, *λείπω*, *λύουσι*, *πῦσι*.

5. Contract *γέρα-α*, *τιμᾶ-ητε*, *αἰδῶ-α*, *δηλό-ητε*, *γῆρα-ι*, *τιμᾶ-οι*, *τιμᾶ-ου*.

6. What letter is dropped in *πατρός* and *βασιλέων*, and what principle does it illustrate?

\* Specimens of Examinations during the school year, 1882-1883.

## II.

1. Give synopsis of perfect middle system of *ρίπτω* and *ἐλέγχω*.
2. Inflect perfect indicative middle of *ρίπτω*; pluperfect indicative middle of *ἀλλάσσω*.
3. Explain augment in the following forms: *εἰρόμην*, *ἐώρταζον* (from *ἐορτδζω*), *συνέλεγον*, *προῦβαινον*, *ἐκδέυδυν*, *ἤνεχόμην*.
4. Give stem and present indicative of the following verbs, explain formation of present from stem, and name the class to which they severally belong: *πορευόμενοι*, *ἐταρράττοντο*, *γῆνομένην*, *ἔδοξεν*, *φθόσκει*.
5. Analyze the following forms: *ἐδίδαξεν*, *δέδενται*, *ἀφικνοῦνται*, *ἐπεχείρησαν*, *ἔμειναν*.

## III.

1. Translate at sight Xen. Anab. V., VII., 5—7.
2. Principal parts of *ἀκούω*, *διαβόλλειν*.
3. Explain the mood of *φαίνωμαι*, *δῶ*, *φαίνωται*, *δύνατο*, *ἀπελθεῖν*.
4. Give all the infinitives of *φαίνωμαι*.
5. Give synopsis of *ἴστε*, *δῶ*.
6. Decline *ἦω*; explain the difference in meaning between *χρη* and *δεῖ*.

## IV.

1. Translate at sight Xen. VII., VII., 4—8.
2. Give the Pres. parts of *εἶπεν*, *καίοντες*, *παρελάβετε*.
3. Construction of *εἰδῆ*, *γενέσθαι*, *ἔλθοις*, *ἔλθοιτε*, *ἐχόντων*.
4. Inflect *ῥῆτε*; synopsis of *οἶσθα*.
5. Give the historical endings of the indicative, active and middle.

## V.

1. Translate at sight Homer's Iliad III., 276—291.
2. Give the Attic prose forms for ἡέλιος, x', νήεσσι, ἀποτινέμεν, ἐσσομένοιαι, Πριάμοιο, εἴως.
3. Give the present and verb stems of χαμόντας, δρόσση, φυλάσσετε, κτείνῃ, ἀποδοῦναι, πεισόντος.
4. Explain the mood of δρόσση, νεώμεθα, κτείνῃ, ἀποδοῦναι, ἐθέλωσιν.
5. Scan lines 278 and 290.

## GREEK COMPOSITION.

## I.

1. After the battle the king and the Greeks who went up with Cyrus made a treaty.
2. The Carduchians did not obey the king, but at one time they made an incursion into his territory with three thousand men.
3. Proxenus with the aid of the hoplites will besiege the city both by sea and by land.
4. The large armies of the Persians were secretly nourished in Sardis.
5. The brave general drew up his soldiers three deep and proceeded toward the outer walls.

## II.

1. The generals go up with about three hundred horsemen.
2. Cyrus and those with him will fight on horseback.
3. Many armies will march to Sardis, a large and prosperous city.
4. The children of the king are both good and beautiful.

5. On the following day the Greeks departed with the ambassadors, and having marched two days, with the Euphrates river on the right, they came to a certain village.

### III.

Each captain arranged his company in sections. The captains and commanders of sections went against the enemy. The peltasts and slingers and bowmen were sent by Cheirisophus to Xenophon and were ordered to do whatever he announced. Xenophon saw them beginning to cross and he sent a messenger in order that they might remain there at the river. When the sling reached and the shield sounded, the soldiers sang a pæan and ran against the enemy. If the enemy had not turned, the trumpeter at the river would not have sounded the charge. But the Greeks turning about on the spear ran and crossed as quickly as possible where each had his rank.

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### L A T I N.

#### I.

1. Give the parts of speech, location, and construction of the following words from Sallust, *De Cat. Conj.* 24-36, *dissimulantem*; 25-1, *libris*; 25-2, *Cinnam*; 25-23, *se*; 25-33, *potentia*.

2. Explain mood of: 23-29, *repudiet*; *parata esse*; *jusserit*; *cunctetur*; 25-8, *nuntiaret*.

3. Write in Latin:

It was announced to the consuls.

It was announced by the consuls.

It was announced through the consuls.

It concerns me. (in two ways.)

It concerns the Roman people.

•



4. Describe the originally distinct uses of the Latin ablative.

Write in Latin :

It is (the duty) of an orator to speak.

It is my (duty) to hear.

The Roman people accused Lentulus of conspiracy.

Lentulus was accused of conspiracy by the Roman people.

## II.

1. Explain the three forms of conditional sentences and give an example of each with translation.

2. Write in Latin :

I ask what you are doing.

I ask what you have done.

I asked what you were doing.

I asked what you had done.

I shall ask what you are doing.

I shall ask what you have done.

3. What moods in concessive clauses follow *quamquam*, *etsi*, *licet*?

4. Give the etymology of *fortitudinis*, *invidiae*, *conjuratorem*, *animadvertissem*, *ejecerit*.

5. Write in Latin: I knew that if he had come into the camp of Manlius, no one would be so foolish as not to see that a conspiracy has been formed.

## III.

Translate at sight :

1. Interim, paucis post diebus, fit ab Ubiis certior, Suebos omnes in unum locum copias cogere, atque iis nationibus quae sub eorum sint imperio denuntiare ut auxilia peditatus equitatusque mittant. His cognitis rebus, rem frumentariam providet, castris idoneum locum deligit, Ubiis imperat ut pecora deducant suaque

omnia ex agris in oppida conferant, sperans barbaros atque imperitos homines, inopia cibariorum adductos, ad iniquam pugnandi conditionem posse deduci; mandat ut crebros exploratores in Suebos mittant quaque apud eos gerantur cognoscant.

2. Write in the active: *Caesar fit ab Ubiis certior.*

Construction of *cogere*?

Explain mood of *sint*.

Give principal parts of *conferant*.

Give all participles of *sperans*.

Explain tense of *deduci*, and trace its dependence.

Explain mood of *gerantur*.

#### IV.

Translate at sight:

Bello Punico secundo, quo dux Carthaginiensium Hannibal post magnitudinem nominis Romani Italiae opes attriverat, Masinissa rex Numidarum in amicitiam receptus a P. Scipione, cui postea Africano cognomen ex virtute fuit, multa et praeclara rei militaris facinora fecerat; ob quae, victis Carthaginiensibus et capto Syphace, cujus in Africa magnum atque late imperium valuit, populus Romanus quascumque urbes et agros manu ceperat, regi dono dedit.

Igitur amicitia Masinissa bona atque honestu nobis permansit. Sed imperii vitaeque ejus finis idem fuit. Dein Micipsa filius regnum solus obtinuit, fratribus morbo absumptis.

Sallust, Jugurtha.

#### V.

Translate at sight:

Nolite arbitrari, o mei carissimi filii, me cum a vobis discessero. nusquam aut nullum fore; nec enim dum eram vobiscum animum meum videbatis, sed eum esse in hoc corpore ex iis rebus quas gerebam intellegebatis. Eundem igitur esse creditote, etiam si

nullum videbitis. Nec vero clarorum virorum post mortem honores permanerent, si nihil eorum ipsorum animi efficerent, quo diutius memoriam sui teneremus. Mihi quidem persuaderi nunquam potuit animos dum in corporibus essent mortalibus vivere, cum excessissent ex iis emori; nec vero tum animum esse insipientem cum ex insipienti corpore evasisset; sed cum omni admixtione corporis liberatus purus et integer esse coepisset, tum esse sapientem.

Cicero, De Senectute, XXII.

Etymology and principal parts of *nolite*?

Synopsis of *intellegebatis*?

Inflection of *credite*?

Construction of *persuaderi*?

Change the conditional sentence beginning: *Nec vero* to one of the third form, past time, and translate.

#### VI.

1. Translate at sight Cicero, Marcellus VI., from *Quare* to *senserunt*.
2. Give a synopsis of *fruere* and *noli*.
3. Give the construction of *bono, natura, sapienti, videantur, viris*.
4. Give the stems of *moribus, fructus, splendor, laude, virtute, viris, opinione, specie, culpa, magnitudine*.
5. Mark the quantities of the last vowel in all the words of the first sentence.
6. Write all the case endings of the third declension.

#### VII.

1. Translate at sight Vergil's *Æneid* VIII., 439-453.
2. Give the future perfect indicative active, third person, singular number of *tollite, advertite, impediunt, accipiunt, reddunt, stridentis, tingunt, gemit, impositis, fluit*.

3. Compare *acri, ocus* ; composition and derivation of *volnificus, ventosis* ; construction of *arte* ; stem of *orbis*.
4. Give *inquit* in full.
5. Scan and prove line 439.
6. Make a line from the initial words.

## VIII.

1. Translate at sight Vergil's *Æneid* VIII., 524-540.
2. Give the derivation of *improviso, fulgor, sonitu, suspiciunt, fragor, casum, caedes, creatrix*.
3. Principal parts of *ruere, mugire, increpat, pulsa, obstipuer, agnovit, quaere, instant, volves, rumpant*.
4. Scan and prove line 527.
5. Give the date of Vergil's birth and death, and the principal places where he lived.
6. Change the quotation to indirect discourse.

## LATIN COMPOSITION.

## I.

From the soldiers that he had in the beginning, Catiline formed two legions, although they were not more than two thousand men. Then those who afterwards came into the camp were evenly distributed, so that in a short time the cohorts were filled.

Not all were equipped with weapons of war ; a part even carried sharpened sticks.

Before this, many had come into the camp of Manlius from Rome, and great numbers of slaves had rushed together to him, relying upon the strength of the conspiracy.

However, he rejected the slaves, thinking that his associates at Rome would carry out his plans and that he should soon have a very great force.

Although Antony was approaching with a large army, Catiline did not withdraw, but having made his way through the mountains moved his camp toward the consul, that he might give him an opportunity of fighting.

## II.

Not all the Romans were able to appreciate the liberal arts, yet they admired them when they saw them in others. It is said that there was no one who was not moved by the death of Roscius, although he had won this affection merely by the movement of his body. And so they admired more the mental activity and the genius of Archias.

He often without writing a single letter would recite *extempore* a great number of most excellent verses. He wrote also so carefully and thoughtfully that he obtained great praise.

The other pursuits have their foundation in precepts and art; but a poet derives his power from nature herself, so that poets are sometimes called divine, because the gods themselves seem to have entrusted them to us as a gift.

## III.

Cicero said that those who had remained in the city and indeed who had been left in the city by Catiline against the safety of the city and of them all, although they were enemies, yet because they were citizens, he wished should be admonished again and again. His leniency, if thus far it had seemed to anyone too lax, had had this in view, that that which was concealed might burst forth. As to the future, he could not forget that that was his country, that he was the consul of those men, that he must either live with them or die for them. There was no guard at the gates, no plotter in the way; if any wished to go forth he could wink at it; but he who should move himself in the city, on the part of whom he should dis-

cover not to say any deed, but any undertaking or attempt against the country, would perceive that in that city there were vigilant consuls, noble magistrates, that there was a brave senate, that there was a prison, which their ancestors had intended should be for the punishment of nefarious and manifest crimes.

## IV.

Was not your victory terminated by the destruction of battle? Was the sword free from the sheath in the city? Since the force of war carried off those citizens who were lost, no one ought to doubt that Caesar would raise many from the dead if it could be done. Can anything be said of the other party than that their victory would have been too revengeful? Punishment may be sought from the Roman people by the immortal gods, unless they bear all hope of safety to the mercy of the victor. Caesar will rejoice not only in his fortune and glory but also in his nature and character. He often asked whether there was so great splendor in true praise, or whether glory was loaned by fortune. There is no doubt but that you have as often thought of your remarkable wisdom and incredible liberality as you have thought of us who are safe through you.

## V.

Aeneas told us what was the fate of king Priam. He said, that when the aged man saw the fortune of the captured city he put around his shoulders his useless arms and rushed into the midst of the enemy; that Hecuba told Priam, that the time did not need such aid and such defenders, and that if Hector himself were present it would not need him; that this altar would guard them all. Moreover Aeneas said that Priam, because Pyrrhus killed his son Polites before his eyes, did not spare his wrath, but exclaimed that he lied if he said he was the son of Achilles, and threw a weapon

in vain ; that Pyrrhus immediately plunged his sword in Priam's side up to the hilt ; and that the head of Priam was torn from his shoulders and his body lay without a name on the shore.

## VI.

Nautes said that Acestes was of divine origin and ought to be taken as a companion in his counsels. So Aeneas delivered to Acestes such as had lost their ships and were weary of the great undertaking. It can not be doubted but that if he had had more ships, although the aged men and women were weak and fearful of danger, he would have taken them with himself in the fleet. Whether he was inflamed more by the words of his aged friend or by the voice of his father Anchises, who seemed to have glided down from heaven, is uncertain. If Jupiter from the high heavens should pity, he would drive the fire from the fleet. Did not Anchises come by the command of Jupiter? Will he remain until the cruel dawn shall have breathed upon him with his panting steeds? Though he flees like smoke from his son's embrace, Aeneas must seek him in the happy councils of the blessed.

## FRENCH.

1. Translate : Mais ce n'est pas ce que je crains : ces accusations ne servent que de prétexte pour pouvoir exercer impunément leur haine et leur animosité contre le sénat et contre l'ordre des patrieins. Faut-il que vous ne demandiez jamais rien au sénat qui ne soit préjudiciable au bien commun de la patrie, et que vous ne le demandiez que par des séditions? Si un sénateur ose vous représenter l'injustice de vos prétentions, si un consul ne parle pas le langage séditieux de vos tribuns ; s'il défend avec courage la souveraine puissance dont il est revêtu, on crie au tyran. A peine

est-il sorti de charge, qu'il se trouve accablé d'accusations. C'est ainsi que, par votre injuste plébiscite, vous avez ôté la vie à Ménénius, aussi grand capitaine que bon citoyen. Ne devriez-vous pas mourir de honte d'avoir persécuté si cruellement le fils de ce Ménénius Agrippa, à qui vous devez vos tribuns et ce pouvoir qui vous rend à présent si furieux?

2. Give the principal parts and synopsis of je crains, pouvoir, est-il sorti, mourir, vous devez.

3. Inflect the present indicative of pouvoir and the present subjunctive of mourir.

4. Write in French: You will be angry with me perhaps for the liberty with which I speak to you in the state where I find myself at present; but I do not fear death; condemn me if you dare; life can be only a burden to a general who is compelled to justify his victories. After all, such a fate as that of Ménénius cannot dishonor me.

5. Translate at sight from Télémaque: Le combat du ceste fut plus difficile. Le fils d'un riche citoyen de Samos avait acquis une haute réputation dans ce genre de combat. Tous les autres lui cédèrent; il n'y eut que moi qui espérai la victoire. D'abord il me donna dans la tête, et puis dans l'estomac, des coups qui me firent vomir le sang, et qui répandirent sur mes yeux un épais nuage. Je chancelai; il me pressait, et je ne pouvais plus respirer; mais je fus ranimé par la voix de Mentor, qui me criait: O fils d'Ulysse, seriez-vous vaincu? La colère me donna de nouvelles forces; j'évitai plusieurs coups dont j'aurais été accablé. Aussitôt que le Samien m'avait porté un faux coup, et que son bras s'allongeait en vain, je le surprénais dans cette posture penchée: déjà il reculait, quand je haussai mon ceste pour tomber sur lui avec plus de force: il voulut s'esquiver, et perdant l'équilibre, il me donna le moyen de le renverser. A peine fut-il étendu par terre, que je lui tendis la main pour le relever. Il se redressa lui-même, couvert



de poussière et de sang ; sa honte fut extrême ; mais il n'osa renouveler le combat.

ALGEBRA.

1. Simplify: 
$$\frac{a - \frac{a-b}{1+ab}}{1 + \frac{a^2-ab}{1+ab}}$$
2. Combine: 
$$\frac{1}{(a-b)(b-c)} + \frac{1}{(b-a)(a-c)} - \frac{1}{(c-a)(c-b)}$$
3. Free from negative exponents: 
$$\frac{a^{-2}b^2 - 1 + c^3d^{-2}}{1 + a^{-3} - b^2c^{-2}d^2}$$
4. Add:  $8\sqrt{\frac{3}{4}} + 2\frac{1}{2}\sqrt{15} + \sqrt{60} - 21\sqrt{\frac{3}{2}}$
5. Given:  $\frac{3}{4}\sqrt{x^2-17} = x - 3$ , to find  $x$ .
6. Given:  $\left\{ \begin{array}{l} x^2 \times xy = 60 \\ y^2 - 2xy = -21 \end{array} \right\}$  to find  $x$  and  $y$ .
7. Develop:  $(2x^2 - 3a)^5, (1 - ax^2)^n$ .

8. If the length of a field were increased 5 rods and its width 4 rods, the area would be increased 240 sq. rods ; but if the length were made 4 rods less and the width 5 rods less the area would be diminished 210 sq. rods. Find the dimensions and verify.

GEOMETRY.

1. State all the theorems involving equality of triangles.
2. In any triangle the greater side lies opposite the greater angle, and the converse. Prove.
3. State all the known facts with reference to the angles formed by one straight line cutting two parallel lines.
4. Prove that any proportion is true by alternation.

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5. Prove the relation of the perimeter of a triangle to the sum of three lines drawn from a point within to the vertices of the triangle.

6. Define a circle, segment of a circle, inscribed angle and tangent.

7. State the relation between chords and their arcs in equal circles; also the measure of the angle formed by two lines intersecting within, on, or without a circumference.

8. To find the centre of a circle.

9. Prove that if two circles intersect the line joining their centres bisects their common chord at right angles.

10. State the value of the square of the sum of two lines, the difference of two lines, and the product of the sum and difference of two lines.

## ENGLISH AND SCIENTIFIC DEPARTMENT.

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### FIRST CLASS.

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#### POLITICAL ECONOMY.

1. What are the sources of wealth? Explain each.
2. State and explain three advantages of division of labor. Explain two ways in which great manufacturing establishments promote the general welfare.
3. Define capital. State and explain two conditions which favor union of labor and capital.
4. Give the rule of Economy applicable to consumption for gratification. Give the two rules which apply to public consumption.
5. What is the distinction between nominal and real wages? What considerations determine the rate of wages?
6. Define dividends. What two elements do they include? Illustrate by some familiar case.
7. Explain the difference between direct and indirect taxation. How does indirect taxation violate Adam Smith's maxims?
8. What is the law of supply and demand? Explain two of the fundamental principles of exchange as stated by Mill.
9. What are the three essential qualities of money? Is a single standard preferable to double? Why?
10. What are the four fundamental propositions of international trade? State one argument in favor of free trade.

## ENGLISH LITERATURE.

1. Caedmon and his works.
2. Origin of the English drama.
3. Life and works of Sir Philip Sidney.
4. Brief sketch of Milton's life, titles of his principal poems, with description of one of them.
5. English translations of Vergil and Homer.
6. The first English dictionary.
7. Life and works of Burns.
8. Histories of England.
9. Name a poem of high rank in each of the following classes, with full name of author, and period when written: lyric, elegiac, epic, mock heroic, burlesque, descriptive, narrative, didactic, allegoric, and satiric.
10. Name the author of each of the following works, state the class of literature to which it belongs, and the period when it was written: "Ivanhoe," "Twelfth Night," "New Atlantis," "Pilgrim's Progress," "Nicholas Nickleby," "Hohenlinden," "She Stoops to Conquer," "Tristram Shandy," "Hind and Panther," and "Virginians."

## ENGLISH ETYMOLOGY.

Give the derivation, history, and present meaning of the following words:

- |                 |                 |
|-----------------|-----------------|
| 1. Autograph.   | 9. January.     |
| 2. Bayonet.     | 10. Malaria.    |
| 3. Calamity.    | 11. Omnivorous. |
| 4. Cordial.     | 12. Predict.    |
| 5. Disease.     | 13. Parlor.     |
| 6. Education.   | 14. Sinecure.   |
| 7. Gerrymander. | 15. Theocracy.  |
| 8. Heathen.     | 16. Zephyr.     |

17. What is the meaning of the suffix *ness*, and from what language does it come? Apply it to *holy*, *late*, *coy*, and *bad*, with spelling rules.

18. Add *ing* to *blue*, *vie*, *shoe*, *abet*, and *garden*, with spelling rules.

19. Give the meanings of the following prefixes, the language from which they are derived, and an example of each : *ante*, *circum*, *ex*, *post*, and *super*.

20. Give the meanings of the following prefixes, the language from which they are derived, and an example of each : *anti*, *epi*, *syn*, *hyper*, and *hypo*.

#### ASTRONOMY.

1. Describe the apparent diurnal motions of the heavenly bodies, as seen from the equator, the north pole, and our own latitude.

2. State, briefly, three direct proofs of the earth's rotation.

3. Explain the cause of twilight, and of its different duration in different parts of the earth. Find, by the globe, the time of sunset and of the close of twilight, this evening, in latitude  $50^{\circ}$  N.

4. What is the time of the sun's rotation, and the inclination of its equator to the ecliptic? How are they obtained?

5. Describe the method of finding the height of a lunar mountain. Calculate the height of one whose illuminated top is  $5''$  from the terminator at quadrature.

6. Explain the effect of the moon's declination on the tides.

7. When do inferior, and when do superior, planets have an apparent retrograde motion, and why?

8. Calculate the greatest elongation of the earth as seen from Neptune; also, the apparent diameter of Neptune as seen from the earth, at opposition.

9. Describe Scorpio, Corona Borealis, and Lyra.

10. Name five first magnitude and ten second magnitude stars north of the equator. For what is  $\alpha$  Centauri noted?

#### GEOLOGY.

1. Name and define the four principal branches of Geology.
2. Name and describe five varieties of mineral coal; also five other minerals containing carbon.
3. Name the principal kinds of igneous rocks, and describe two of them. In what parts of the United States, and in connection with rocks of what ages, are they most frequently found?
4. State the action of freezing water upon rocks. What forms of frozen water produce geological effects, and how?
5. State the effect of the action of waves on the outline of coasts. How may bays and fiords have been formed?
6. What kinds of rocks are found in the Archæan beds, and in what parts of North America?
7. Classify and describe crinoids. In what ages are they found? What are pentremites, and in what age did they live?
8. Give the supposed time-ratios of the Paleozoic and Mesozoic times, and of their subdivisions, with the method by which they are estimated.
9. Define birds. Why are they not more frequently found fossil? Describe the earliest ones found; also three large ones which have become extinct in modern times, with localities.
10. Describe the trilobite, tentaculite, cephalaspis, belemnite, and lepidodendron. State the class to which each belongs, and the ages in which it lived.

#### CONSTITUTION OF U. S. AND B. I.

1. Compare the government of the United States with that of England.
2. Describe the different forms of colonial governments. Name two colonies under each.

3. Give the preamble.
  4. In what are the three separate powers of government vested? Clause vesting each.
  5. Art. I, Sec. 8, Clause 1. Write the clause and discuss methods of collecting revenue.
  6. Art. II, Sec. IV. Removal by impeachment. What other clauses mention impeachment?
  7. State the different ways in which the Constitution may be amended.
  8. Amendment VI. Rights of the accused in criminal prosecutions.
  9. What is said about religious liberty in the constitution of this State?
  10. What relations do the Governor and Lieut.-Governor sustain to the legislative power in this State? Where is the pardoning power vested?
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## SECOND CLASS.

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### CHEMISTRY.

1. Give five ways of making hydrogen, with equation for each; also physical properties and test.
2. Give the volumetric composition and calculate the vapor density of  $N_2O$ ,  $HCl$ ,  $H_2N$ ,  $H_2As$ , and  $HgCl_2$ . Also calculate the percentage, by weight, of the positive element in each. (As, 75; Hg, 200; others from memory.)
3. Give the sources and properties of iodine and bromine, with derivation of names, and special test for iodine.
4. Give the sources and properties of  $CO_2$ , with equations and tests for gas and salts.

5. Give the composition, sources, and properties of glycerin ; also nature and use of nitro-glycerin.

6. State the sources and uses of picric acid and tannic acid.

7. Give tests for sulphates and chlorides in solution, with equations and explanations.

8. State the properties and uses of the metal magnesium and its compounds.

9. How may the hydrates of iron be precipitated? with equations. Calculate the number of pounds of ferric hydrate which will be required to contain 25 kilograms of iron.

10. Give the common formula for each of the following substances, the graphic formula for five, and the common name for five: acetic acid, potassium hydrogen tartrate, arsenious anhydride, lead carbonate, potassium hydrate, calcium hydrate, calcium fluoride, ammoniac hypobromite, strontium perchlorate, and sodium sulphite.

#### DOUBLE ENTRY BOOKKEEPING.

1. What does Merchandise account show? How is it kept? How is it closed?

2. Describe the journal and the method of its use. How is net gain found?

3. Describe the process by which we open a second ledger in Double Entry. Describe and state the use of cash book as used in the sixth set, Double Entry.

4. Describe and state the use of Interest account. How is it closed? Describe the proprietor's account.

5. 6. 7. 8. 9. 10.

Journalize, post, and make out trial balance in the following history of business:

Commenced business with a cash capital of \$3,000. Bought for cash 100 bbls. flour @ \$10. Bought of J. K. Penn, on account, 500 bushels wheat @ \$2.00. Sold for cash 25bbls. flour @ \$11. Sold



H. D. Stratton, on his note, 300 bush. wheat @ \$2.25. Bought of S. S. Packard, on our note, 200 bbls. of flour @ \$10.50. Sold for cash 100 bbls. flour @ \$11. Sold E. G. Folsom, on his note, 50 bbls. flour @ 11.25; 100 bush. wheat @ 2.30. Paid cash for rent of store \$150. Paid cash for clerk hire \$25. Sold James Atwater, on account, 25 bbls. flour @ 11.20. Received cash for H. D. Stratton's note. Received cash for James Atwater's account \$100. Sold for cash 100 bbls. flour @ \$11. Sold W. A. Miller, on account, 100 bush. wheat @ 2.25.

TRIGONOMETRY.

1. State and prove the rule for dividing by means of logarithms.
2. When the radius of an arc is greater than one, what relation does the function of that arc have to that of which the radius is unity. Demonstrate.
3. State and demonstrate the formula for finding the base when hypotenuse and angle at base are given.
4. In an oblique angled triangle, given two sides and angle opposite one of them to find the remaining parts. Give the formula. Demonstrate when one angle is obtuse.
5. Draw diagram and designate the eight different functions of an arc; also their algebraic signs, when the arc is equal to  $95^\circ$ .

What is the reciprocal of each of the following circular functions : tangent, cotangent, secant, and sine?

Solve the following problems :

6.  $\left( \frac{579.2 \times .0785 \times .00005}{7.8 \times 134} \right)^{\frac{2}{3}}$
7. Given  $\left\{ \begin{array}{l} \text{base } 53.42 \\ \text{per. } 75.18 \end{array} \right\}$  to find the other parts of the right-angled triangle.
8. Given  $\left\{ \begin{array}{l} AE = 63.46 \\ A = 48^\circ 34' 22'' \\ B = 79^\circ 51' 30'' \end{array} \right\}$  to find the other parts of the triangle.

9. Given one side of a triangle equal to 654 feet, one of the adjacent angles equal to  $41^{\circ} 0' 39''$ , and the other adjacent angle equal to  $55^{\circ} 34' 8''$ , to find the other parts.

10. Given the perpendicular of a right-angled triangle equal to 8555.4 yards, and the angle at the perpendicular equal to  $33^{\circ} 30' 47''$ , to find the base.

#### GEOMETRY.

1. Define Geometry, geometrical magnitudes, problem, corollary, and regular polygon.

2. Demonstrate Prop. XXIV., Bk. I. Two angles having parallel sides—.

3. Prop. IX., Bk. II. If two quantities be increased or diminished by like parts of each, the results will be proportional to the quantities themselves.

4. Prob. XIII., Bk. III. To find the centre of a given circumference.

5. Prop. XVII., Bk. IV. A line which bisects the vertical angle of a triangle divides the base—.

6. Prob. XV., Bk. V. Find expression for area of circle.

7. Prop. XIV., Bk. VI. If two straight lines are cut by three parallel planes—.

8. Prop. XVII., Bk. VII. The volume of a pyramid is equal to what? Demonstrate and give formula.

9. What is the volume of a pyramid 480 feet high, with a square base 764 feet on each side?

10. (a) What is the surface of a sphere 10 inches in diameter?

(b) What is the convex surface of a cylinder 3 inches in diameter?

#### HEAT AND ELECTRICITY.

1. How do gases differ from solids and liquids in the rate of expansion by heat? If 200 cu. cm. of gas be heated from  $20^{\circ}$  F.

to 500° F., what will be its volume, if the pressure be reduced one half?

2. Define steam. What is its volume compared with that of an equal mass of water? How does pressure affect the boiling point? What will be the result if 5 pounds of ice at —40° F., 4 pounds of water at 122° F., and 1 pound of steam at 150° C. be mixed?  
Ans. C.

3. Give three illustrations of the conversion of mechanical energy into heat. If a lead ball strike a target with a velocity of 1200 feet per second, show that the heat generated is sufficient to melt the lead. [Latent heat 5.4° C., specific heat .0314, melting point 326° C. Consider ball at 15° C. in beginning.]

4. Explain the eccentric, fly-wheel, and safety valve of the steam engine.

5. Given a bar magnet, how would you determine the sign of either of its poles? What is a diamagnetic substance?

6. Explain two kinds of electroscopes and their use.

7. Explain two experiments with frictional electricity in a dark room.

8. Explain the simple voltaic element, including the course of the current and the chemical action.

9. Give a brief statement of the principles of two systems of electric lighting.

10. Describe Ruhmkorff's coil and its action.

#### RHETORIC.

1. What four special values has the study of Rhetoric? Explain each.

2. Define invention. Explain: "What it is to think and what thought is."

Name and define two kinds of adjective modifiers. Examples.

3. Name and contract the following clauses:

(a) "The Son of Man had no place where he might lay his head ;"

(b) "That we make the most of golden opportunities is a privilege as well as a duty ;"

(c) "How delightful it would be, if we could throw away our locks and turn our jails and prisons into hospitals ;"  
to infinitive and prepositional phrases.

4. Name the three important steps in preparing a framework. Take the theme: "The True Hero," analyze, giving four principal heads, arranged according to importance.

5. Define tautology, verbosity, redundancy. State when and where these may be allowed. State which is illustrated in each of the following, and correct: "The inebriety is a vice." "He lives near to his father." "The dawn is overcast ; the morning lowers and heavily in clouds brings on the day."

"Five years have past ; five summers with the length  
Of five long winters ! and again I hear  
These waters rolling from their mountain spring  
With a sweet inland murmur."

6. Name and define two figures of speech. Example of each. Give the rhetorical value of each.

7. Name two figures in the following :

"In youth from rock to rock I went,  
From hill to hill in discontent  
Of pleasure high and turbulent,  
Most pleased when most uneasy.  
But now my own delights I make,  
My thirst at every rill can slake,  
And gladly Nature's love partake  
Of thee, sweet Daisy !"

and explain the punctuation.

8. Define wit, four subdivisions of wit and pathos. Name kinds of wit and pathos in the following :

“ 'Tis true this god did shake, I did hear him groan.” “ The Romans were said to urn their dead, but we earn our living.”

9. Define poetry. How does it differ from prose? Define rythm and foot. Name the kinds of feet, and indicate accent of each by sign.

10. Name the metre in stanza under 7th ques. Copy the first 4 verses, and indicate the accent by sign, separating the feet by a dash. Do these lines differ? How?

### THIRD CLASS.

#### ALGEBRA.

1. Define a power, a root, similar terms, a pure quadratic equation, and an imaginary quantity.

2. What is the least common multiple of  $(m^2-4)$ ,  $(zm-2z)$ , and  $(m^2+2m)$ ?

3. From  $\frac{1+a^2}{1-a^2}$  take  $\frac{1-a^2}{1+a^2}$ .

4. Remove negative and zero exponents from the following expression :  $\frac{x^2 y + y^2 - a^0 b x^2}{x^4 + y^3}$ .

5. A says to B, “Give me 100 of your dollars and I shall have as much money as you ;” B replies, “Give me 100 of your dollars. and I shall have twice as much as you ;” how much money had each?

6. Reduce the following to its simplest form :  $(24 x^5 y^3 z)^{\frac{1}{3}}$ .

7. Given  $\left\{ \begin{array}{l} 2x^2 - xy = 6 \\ 2y^2 + 3xy = 8 \end{array} \right\}$ , to find the values of  $x$  and  $y$ .

8. The sum of two numbers is 6, and the sum of their cubes is.

72. What are the numbers?

9. Find four arithmetical means between 7 and 37.
10. The sum of three numbers is 59 ; one half the difference of the first and second is 5, and one half the difference of the first and third is 9 ; required the numbers.

#### NATURAL PHILOSOPHY.

1. Define cohesion and adhesion. State the law of reflected motion.
2. If a body is thrown downward with a velocity of 30 feet per second, how far will it fall in 5 seconds?
3. Define a simple and a compound pendulum.
4. What is the horse-power of an engine that can raise 990,000 foot-pounds in 5 minutes?
5. How would you find the specific gravity of liquids?
6. Find the pressure on one side of a cubical box which is filled with water, and whose edge, measured on the inside, is 10 feet.
7. Describe and explain the baroscope.
8. State the practical effects of beats.
9. By means of a diagram, represent the image of an object which is placed between the principal focus and the centre of curvature of a concave mirror.
10. State the laws of refraction of light.

#### MODERN HISTORY.

1. (a) What were the two great events in the reign of the Emperor Charles V. ?  
(b) What verdict has history pronounced on Henry VIII. of England for his conduct in divorcing Queen Katharine ?
2. (a) What was the condition of the Netherlands at the beginning of the reign of Philip II. ?  
(b) Describe the administration of Sully.
3. (a) Describe the character of James I. of England.

- (b) What can you say of the Treaty of Westphalia?
- 4. (a) Describe the government of Mazarin.
- (b) Who was the Pretender? What did he attempt to do?
- 5. (a) Give an account of the first Silesian War.
- (b) Describe Bonaparte's invasion of Russia.

## MEDIEVAL HISTORY.

- 1. Give an account of the Slavonians.
- 2. (a) Mention the principal facts in the career of Pepin.
- (b) Mention the principal facts in the career of Haroun-al-Raschid.
- 3. Describe the wars waged by Charlemagne against the Saxons.
- 4. (a) Describe the capture of Antioch, during the First Crusade.
- (b) Describe a castle of the Middle Ages.
- 5. (a) Describe the union of the Anglo-Saxon and Norman-French languages.
- (b) Who were the Medicis?

## ANCIENT HISTORY.

- 1. Give an account of the Dorian migration.
- 2. State all the facts you know in regard to Aristides and Themistocles.
- 3. Describe the battle of Aegospotamos. What were its results?
- 4. What was the relation of Macedonia to Greece before the time of Philip?
- 5. What was the intellectual history of later Greece?
- 6. What reforms did Servius Tullius make?
- 7. Give an account of the capture of Rome by the Gauls.
- 8. How did Rome organize and govern the "Provinces?"

9. Describe the career of Tiberius Gracchus.
10. Describe the career of Attila the Hun.

#### SINGLE ENTRY BOOKKEEPING.

1. State the advantages of the ledger.
2. What is a check-book? Explain two methods of keeping a check-book.

3. Define drawer, maker, drawee, and to protest.

4. Explain the method of keeping the cash-book.

5. Enter in the proper books the following transactions :

Dec. 20, 1882. Hiram Mason and Thomas Wright enter into partnership, Mason invests mdse., \$1,800; bal. due on account from Henry James, \$85; from J. E. Carter, \$90; cash, \$500. Thos. Wright invests store, \$3,000. The firm assumes the following liabilities of Wright: his promissory note outstanding, \$500; bal. due on account to J. E. Carter, \$25.

6. If there were no room on the page of a ledger for the other items, how would you close the following account?

| DR.   |   |                |   | HENRY MASON. |     |    |          | CR.   |  |      |  |
|-------|---|----------------|---|--------------|-----|----|----------|-------|--|------|--|
| 1876. |   |                |   |              |     |    |          | 1876. |  |      |  |
| May   | 7 | To dictionary, | 4 | 12 00        | May | 10 | By Cash, | 6     |  | 6 00 |  |
| "     | 9 | " blank book,  | 5 | 1 00         | "   | 11 | " " "    | 6     |  | 2 00 |  |

Enter in the proper books the following transactions :

7. Dec. 20, 1882. Sold J. E. Ladd 200 bush. corn @ \$1.00. Paid rent of store \$200.

8. Dec. 21, 1882. Sold Jas. Margrave, on his note at 10 days, 60 bush. wheat @ \$1.50. Write the note and record it in the bill-book. Discounted bills pay. No. 2, for Henry Carr, amt. \$300; dis. \$3.50.

9. Dec. 23, 1882. Sold Payton Gardiner, on account, 1 office



chair, \$20.00. Bought of Jones & Smith, cabinet ware furnishing, as pr. bill, \$93.25. Paid wages, as pr. time-book, \$22.50.

10. How would you ascertain, by single entry, whether a business had been profitable or unprofitable?

#### PHYSIOLOGY.

1. Describe the joints and ligaments.
2. What is the effect of exercise on the heart, skin, and appetite? What are the special benefits of each of the following kinds of exercise: walking, running, horse-back or carriage riding, and gymnastics?
3. Describe the cutis, or true skin.
4. The importance of water, and its uses, in the human system.
5. Of what importance is insalivation, indigestion?
6. What are the movements of the stomach, and their uses?
7. What are the lacteals, and their use?
8. Describe the veins. Give the chief point of difference in the structure of the vein and the artery.
9. What changes in the blood take place from respiration?
10. What are the spinal nerves, and how are they arranged?

## GIRLS' DEPARTMENT.\*

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### SENIOR CLASS—FOURTH YEAR.

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#### MENTAL PHILOSOPHY.

1. Is our knowledge of matter absolute or relative?
2. Define consciousness. What is the validity of consciousness?
3. Which comes first, a concept or a precept?
4. What relation does conception bear to our mental processes?
5. Give the difference between the state of mind of a child and a scientist when any object is mentioned.
6. What is meant by the assertion that "no one has ever seen a horse"?
7. Give the difference between the primary and secondary qualities of matter.
8. How did nihilism follow idealism and how only can idealism be overthrown?

#### ASTRONOMY.

1. In what portion of the earth is the north-star directly overhead?—What is the nearest fixed star?—How long does it take light to come from it to the earth?
2. Have the orbit and time of revolution of any comet been computed? How are comets affected by coming near any large planet?

\*Selections from written examinations given during the year.

3. What places have noon at the same time? Is it correct to say the sun moves along the ecliptic? Reason for answer.

4. What is the cause of a solar eclipse? What of a lunar?

5. How much farther from the sun is Saturn than the earth is from the sun? Which is the largest planet? Its diameter? Which planet's diameter is nearest to that of the earth? Which is about half the earth's?

6. Define aspects of the planets and draw a diagram to illustrate. What aspect of a planet have you seen?

7. July 25th.....+ 6 min.

May 14th.....+ 4 min.

When it is noon by the sun at the above dates, what time is it by our clocks? Explain.

8. Define the years used by astronomers.

9. How does refraction of light affect the apparent position of a heavenly body? Illustrate by its effect on the sun.

10. Explain spring and neap tides.

#### MILTON—PARADISE LOST.

1. Give the history of the composition of Paradise Lost.

2. Give the distinguishing excellences of the poem.

3. What was Milton's conception of his office as a poet?

4. What explanation may be given of Milton's use of pagan mythology?

5. Name the four speakers in the Stygian Council, giving their characteristics. Name the passages that have been learned and the books that have been read either in the class or alone.

#### SHAKESPERE—RICHARD III.

1. In what respects does this play represent the history of the time?

2. Give the age of Richard at the time of his introduction and at his death. What was the character of his government?
3. Name the most striking passages.
4. Quote from memory passages giving the name of the speaker.

### GEOLOGY.

1. Describe the specimen (granite) and state how its constituents may be distinguished.
2. Explain the making of flint or hornstone.
3. Define erosion, denudation, degradation, detritus, silt.
4. How is it known that sedimentary rocks are deposited by water?
5. Give an analysis in full of the making of valleys.
6. Give three facts noticed in respect to mountains and their probable explanation.
7. What is the source of the *ashes* or *clinkers* of a coal fire?—What is the difference between anthracite and bituminous coal?—How does the character of the coal change in going from the Rocky Mountains east?—What are the rocks of the coal-measures?—What is the character of the fossils of the coal-measures?
8. Give three marked examples of advancement in life that took place in mesozoic time.
9. Give the divisions of the tertiary.—Explain the force of these names in respect to the life.—Where were tertiary rocks formed in North America?—What mountain chains were raised during this age?—What changes took place in the horse during the tertiary?
10. Give a short account of pre-historic man.

### MORAL SCIENCE.

1. Define conscience. Can it be educated? Is it ever blunted?
2. Define obedience.

3. State the conditions of humanity that require efforts on our part.
4. What is the duty of each person in regard to temperance?
5. Give reasons for maintaining public schools, especially High Schools.
6. Discuss the power of character.

LATIN.

THE ÆNEID.

Book III.

Lines 49—52. Translate.

Line 91. Scan and explain irregularity.

Lines 173—174. Translate and give the peculiarity in 173.

Line 234. Give two explanations of the mode of *capessant*.

Line 280. Translate and explain.

Line 411. Give the principal parts and synopsis of *rarescent*; what kind of a verb is it?

Book IV.

In what year of Æneas' wanderings does this book begin? What place did he last visit before reaching Carthage?

Lines 15—19. Explain this conditional sentence and give the verbs of the condition and the conclusion.

Lines 252—255. Translate.

Lines 289—294. Give the verbs in subjunctive of the indirect discourse for the imperative of the direct.

Lines 314—319. Translate.

Lines 431—434. Translate.

Book V.

Line 193. Translate "*Maleaeque sequacibus undis*"; explain and give quotation.

Lines 213—219. Translate.

Lines 250—251. Translate and explain *Maeandro*.

Line 354. Translate "Et te lapsorum miseret;" and give the construction of *te* and *lapsorum*.

Line 379. Describe the caestus; and quote Latin in support of your description.

Lines 394—396. Translate.

Lines 485—489. Translate.

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## SECOND CLASS—THIRD YEAR.

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### PHYSICS.

1. Explain the simmering or singing of liquids. What is the boiling point of any liquid? Compare any volume of water with the volume of steam it will make.
2. Define latent heat and explain the formulas for the latent heat of water, and of steam.
3. Illustrate the different methods of diffusing heat and give the mechanical value of a heat unit.
4. What is a natural magnet, and how are artificial magnets made?
5. What is electricity? Show that there are two and only two kinds of electricity, and give the test for either kind.
6. Define electric tension. What is an electric condenser? Describe the Leyden jar.

7. Where in a charged body is the electricity found to reside? Explain the phenomena of thunder and lightning.
8. Describe the plate-machine and its action.
9. Describe a simple voltaic element, and trace its current. Describe the electric lamp.
10. Explain the electric telegraph. Name points of likeness and of unlikeness between a magnet and an electro-magnet.

## CHEMISTRY.

1. What proportion of the air is oxygen?
2. If fish breathe, how do they get air?
3. Why will a jet of hydrogen directed against platinum be ignited?
4. Define the terms *isomerism* and *allotropism*, and give an illustration of each.
5. How much calcium in 112 lbs. of quicklime?
6. Mention two uses of  $\text{SO}_2$ .
7. What symbols represent the composition of ethyl alcohol, sal soda, and aqua fortis?
8. What is the difference between *hydrochloric* acid and *chloric* acid?
9. What is the difference between an acid and a base?
10. If sulphuric acid and slacked lime be combined, what new compound will be formed? Will they combine in all proportions? Give the reaction.
11. Describe two experiments which prove the presence of carbonic dioxide in the breath. About how much of this gas is exhaled by an adult in one day?
12. Will  $\text{CO}$  and  $\text{CO}_2$  burn? If so, what is produced in each case? How much  $\text{C}$  must be consumed to produce 11 oz. of  $\text{CO}_2$ ?
13. What are the ingredients of illuminating gas?
14. Which one blackens silver, when it escapes?
15. What is an antiseptic? Mention three.

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GEOMETRY.

1. Define the terms Geometry, parallel lines, hypotenuse, angle, supplement of an angle, scalene triangle, altitude of a triangle, locus of a point, alternate interior angles, homologous angles.

2. Show that at a point in a straight line only one perpendicular to that line can be drawn ; and that from a point without a straight line only one perpendicular to that line can be drawn.

3. Prove that when the sum of two adjacent angles is two right angles, their exterior sides form one and the same straight line.

4. Prove that if two parallel straight lines are cut by a third straight line, the exterior-interior angles are equal, and that the alternate-interior angles are equal.

5. Prove that when two straight lines are cut by a third straight line, if the sum of the two interior angles on the same side of the secant is two right angles, the two straight lines are parallel.

6. Show by demonstration what is the sum of the interior angles of a polygon ; and what is the sum of the exterior angles of a polygon, made by producing each of its sides in succession.

7. Prove that the three bisectors of the three angles of a triangle meet in a point.

8. State theorems showing the value of square formed on any side of any triangle whatsoever.

9. Prove that if in any triangle a medial line be drawn from the vertex to the base :

The sum of the squares on the two sides is equivalent to twice the square on half the base plus twice the square on the medial line.

The difference of the squares on the two sides is equivalent to twice the product of the base by the projection of the medial line upon the base.



10. Given an isosceles triangle having a vertical angle of  $50^{\circ}$ . Required the other angles of the triangle.

Given an isosceles triangle having an angle at the base of  $40^{\circ}$ . Required the other angles of the triangle. Bisect the angles at the base and produce the bisectors until they meet; how large is the vertical angle of the inner triangle?

Given a right triangle having an angle of  $20^{\circ}$ . Required the third angle. Bisect in succession each angle and produce the bisectors to meet the side opposite. Required the size of each angle in each of the triangles formed.

#### ENGLISH LANGUAGE.

1. Of what use are words? What constitutes good English? Compare the use of our language in England and America.

2. Compare Anglo-Saxon and Latin words. What parts of the language are from Anglo-Saxon? Account for difference of pronunciation among peoples speaking the same language.

3. Give account of the Danes and their supremacy in Britain. What natural features of Britain have Celtic names?

4. What was the condition of learning in Europe during the tenth century?

5. How did the writings of Wycliffe and Chaucer discipline the language?

6. During what centuries was there a large accession to the language from the Latin? What groups of words belonged to this accession? Who was the Tyrtaeus of English song?

7. What was the gain and what was the loss to the language on account of the French influence of the seventeenth century?

8. Who was the author of "Piers Ploughman"? Mention any peculiarity in his writings. Who wrote the "Creed of Piers Ploughman"?

9. Trace the progress of the drama.

10. Give account of Roger Bacon. Name two centuries noted for great progress in the language. Give the subject and date of the "Ancren Riwe." Who was the Anacreon of the English writers? What was Shakespeare's superiority over other authors?

#### ENGLISH POETS: POPE AND BURNS.

1. Mention the principal writers who were contemporary with Pope. To what period of English literature do these writers belong?

2. Give a brief account of Addison's life, and mention his best known works.

3. How has Pope divided the Essay on Man, and what is the subject of each division?

4. What is the argument of the third section of the first Epistle? Give a short quotation from it.

5. Quote the closing lines of the Epistle. What is the meter of the poem, and how does it rhyme?

6. Give a brief outline of Burns's life.

7. Mention ten well-known poems and songs by him.

8. Describe the stanza of *The Cotter's Saturday Night*. From whom does this stanza receive its name?

9. What is the meaning of the words, *Cotter*, *haffets*, *stacher*, *flichterin*, *carking*, *cannie*, *spiers*, *uncos*, *gars* and *eydent*?

10. Mention the eminent poets contemporary with Burns.

#### CICERO.

##### FIRST ORATION AGAINST CATILINE.

1. When and where was this oration delivered? On what occasion?

2. Translate: I., beginning with *An vero*, six lines.

3. Give the construction of *Gracchum* and *rebus*. How could

the *pontifex maximus* be termed *privatus*? What were the crimes of *Gracchus* and *Maelius*?

4. Translate: VII., beginning with *Si te parentes*, six lines.

5. What does *Si* connect? Why are *timerent*, *odissent* and *concederes* in the subjunctive mood? What does *nec* connect?

#### SECOND ORATION.

1. What results did Cicero design to achieve by this oration? To whom was it addressed?

2. Translate: I., from beginning through *comparabitur*.

3. Give the construction of *vobis*, *urbi*, *ferro*, *flamma* and *egredientem*. Explain *verbis prosecuti sumus*. What was the *togu praetexta*?

4. Translate: V., beginning with *Quibus ego*, five lines.

5. What do *et* and *aut* connect? Give the principal parts of *impendere*. Parse *sustulerit*. To what is *nescio quod* equivalent?

### THIRD CLASS—SECOND YEAR.

#### RHETORIC.

1. What is meant by *style* in rhetoric? What elements determine it?

2. Name the conditions upon which perspicuity depends.

3. Give rules for the use of words.

4. Write sentences embodying the following words, and give, if possible, a Saxon equivalent for each: *residence*, *circumspect*,

*occult, termination, supersede, interpolate, anomaly, tortuous, obliterate, circumlocution.*

5. Distinguish between the following synonyms: *who* and *which*; *in* and *into*; *healthy* and *healthful*; *haste* and *hurry*; *shall* and *will*.

6. What fault arises from a careless use of pronouns? In what ways may it be avoided?

7. Give five sentences ambiguous from their use of personal pronouns, and free them from their ambiguity.

8. Point out the difference between *tautology*, *verbosity*, and *redundancy*.

9. Point out and correct errors in the following sentences:

I am careful of repeating the same thing more than once.—Rhetoric teaches us to speak so that we will be understood.—She made her *début* in the Providence opera-house for the first time.—The book is in my hand which is very much defaced.—We ought to not use too many words.

10. What are the principal rules for the arrangement of words, phrases, and clauses?

11. How does imagery originate? Name the common figures of speech.

12. Write a beautiful metaphor, metonymy, antithesis, and apostrophe, selected from your own reading.

13. What effect is produced by the use of specific words rather than generic?

14. In what seven ways may *energy* be secured?

15. Is slang objectionable? why? Do you ever use it? why?

## MEDIAEVAL AND MODERN HISTORY.

### I.

1. Name the historical races of Europe of Aryan stock.

2. Which of the modern races first entered Europe?

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3. Which of the Graeco-Latin tribes had a direct influence in the civilization of the barbarians?

II.

1. In what century did Justinian rule?
2. Over what country, and with what title?
3. Name one important event or enterprise of his reign.

III.

1. Who was Mohammed?
2. Give a brief account of his followers.

IV.

1. What were the Crusades?
2. State their effect:
  - (a) On social life.
  - (b) On commerce.
  - (c) On feudalism.
  - (d) On chivalry.
  - (e) On intellectual growth.

V.

1. Who took the lead in the German Reformation?
2. Who was Pope at this time?
3. What nations embraced Protestantism most readily?

VI.

1. What was the decisive battle of the civil war in England?
2. Give the date of this battle.
3. What English king was brought to the scaffold?
4. Give the date of this event.
5. Give the date of the Restoration.

## VII.

Name five persons prominent in the Thirty Years' war.

## VIII.

Name five women famous in history, and tell when and where they lived, and for what noted.

## IX.

Explain any ten of the following allusions: "Scourge of God"; the "Hermit"; "sluggard kings"; Hildebrand; Hanseatic League; Wars of the Roses; Saxon Heptarchy; the "King-Maker"; the Diet of Worms; "Defender of the Faith"; the "Virgin Queen"; "Invincible Armada"; "Roundheads"; the "Rump"; "Right divine of kings to govern wrong."

## X.

When, where and between what parties were the following battles fought?

Naseby, Lützen, Blenheim, Trafalgar, Waterloo, Ivry, Senlac, Crecy, Bosworth Field, Leipsic.

## PHYSICS.

## I.

Explain what is meant by the buoyant force of fluids, and show why a solid is buoyed up by a fluid, and with how great a force it is buoyed up.

## II.

What is the difference between the density and the weight of a body?

## III.

State the difference between potential and kinetic energy, with examples. When heat is generated by chemical action, what transformation of energy takes place?

## IV.

1. What is conduction?
2. What are the best conductors?
3. Why do we wrap ice in flannel to keep it cool, and wrap ourselves in blankets to keep warm?

## V.

What is the best method of ventilation, as shown by experience?

## VI.

1. How much heat disappears in melting one kilogram of ice?
2. In converting one kilogram of water into steam?
3. Is this heat really lost?
4. What becomes of it?

## VII.

1. What are the two kinds of thermometer in most general use?
2. State the freezing and boiling points in each.
3. How are extremely high and extremely low temperatures measured?

## VIII.

What is the origin of winds?

## IX.

1. What is the direction of sound-vibrations?
2. What kind of a medium is necessary for the transmission of sound?

## X.

1. What are the characteristics of a musical sound?
2. On what does pitch depend?
3. What is the object of "sounding-boards" in musical instruments?

## ENGLISH LITERATURE.

1. How many cantos has *The Lady of the Lake*? What are their subjects? Write an analysis of Canto III.
2. What associations have you with *Beltane*, the *fiery cross*, the *Trosachs*, *Loch Katrine*, *Stirling*?
3. In what measure is the poem written? How is the measure varied? Name and describe the kind of stanza used in the introduction to each canto.
4. Explain the expressions, the *pibroch*, the *coronach*, and the *slogan*. Define alliteration, and quote some good example of it.
5. Where was Scott born? Goldsmith? Gray? Burns? Give dates of birth and death of each.
6. What was the name of the Vicar of Wakefield? How many children had he? What were their names? What were their characteristics?
7. Was Moses Primrose a good man of business? Was the Vicar? Prove your statement.
8. What qualities of style have you noticed in *The Vicar of Wakefield*? Illustrate by reference to the story.
9. Is *The Deserted Village* wholly imaginary? If not, what foundation has it in fact?
10. Prove from the poem Goldsmith's views of luxury, of city and country life, and of a pastor's duty.
11. When was Gray's *Elegy* published? How long time did the author spend upon its composition? What church-yard is probably referred to?



12. Write a paraphrase of the stanza beginning : "Some village Hampden."

13. Quote a fine passage from the poem and state why you admire it.

14. To whom is *The Cotter's Saturday Night* dedicated? Compare Burns' motive in making this dedication with that of many other poets.

15. Explain fully the fourth stanza.

### BOOK-KEEPING.

1. Define assets, liabilities, net capital, proof-sheet, debit and credit.

2. State the use of the day-book, journal, ledger, cash-book and bill-book.

3. Describe the various steps in closing a ledger. What new accounts are opened, and what kinds of entries appear in each? What do red-ink entries signify?

4. What general rules may be given for journalizing?

5. Explain the terms : maker, payee, drawer, indorse, negotiable note.

6. Journalize the following transactions :

Record of the transactions of the week ending Oct. 28, 1882, by Henry Jones, proprietor of a grocery store in Warwick, R. I.

Oct. 23. Sold Oliver Jencks, 15 tubs butter, 800 lbs., @ 30c. ; 40 doz. eggs, @ 25c. Received in payment, cash \$100.00, bal. on account.

Oct. 24. Paid for freight, 50c. Bought of John Hawkins, on my note @ 10 days, bill of goods amounting to \$300.00.

Oct. 25. Sold E. D. Peck,

5 bbls. Haxall flour, @ \$8.00.

10 " crushed sugar, 2,100 lbs., @ 10c.

Received in payment his note for 30 days.

Oct. 26. Sold A. D. Ballou, for cash, 20 boxes of raisins, @ \$3.00.

Oct. 27. Received of Oliver Jencks cash to bal. acc., \$150.00.

Oct. 28. Henry Rose has paid his note of the 15th inst., due this day, \$1,500.00.

7. Write forms of promissory notes in previous question, and enter in bill-book.

8. Draw a sight-draft; make out a check; an order for merchandise.

9. Close the following merchandise account: Amount by inventory, \$4,700.00 :

| DR.  |   | MERCHANDISE.     |          | CR.  |    |                    |        |
|------|---|------------------|----------|------|----|--------------------|--------|
| Jan. | 1 | To Amos Jones,   | 800.00   | Jan. | 3  | By cash,           | 400.00 |
| "    | 3 | " H. Barnes,     | 4,000.00 | "    | 4  | " bills receivable | 250.00 |
| "    | 5 | " bills payable, | 40.00    | "    | 9  | " cash,            | 100.00 |
| "    | 8 | " " "            | 500.00   | "    | 12 | " J. White,        | 700.00 |
| "    | 9 | " cash,          | 1,000.00 |      |    |                    |        |

10. Define a joint note, and a joint and several note, and state the liabilities of the makers in either case.

### CAESAR.—BOOK III.

Translate :

His praegerat Viridovix ac summam imperii tenebat earum omnium civitatum, quae defecerant, ex quibus exercitum magnasque copias coegerat; atque his paucis diebus Aulerci Eburovices Lexoviique, senatu suo interfecto, quod auctores belli esse nolebant, portas clausurunt seque cum Viridovice conjunxerunt; magna praeterea multitudo undique ex Galliâ perditorum hominum latro- numque convenerant, quos spes praedandi studiumque bellandi ab agriculturâ et quotidiano labore revocabat. Sabinus idoneo omni- bus rebus loco castris sese tenebat, quum Viridovix contra eum

daum millium spatio consedisset, quotidieque productis copiis pugnandi potestatem faceret, ut jam non solum hostibus in contemptum Sabinus veniret, sed etiam nostrorum militum vocibus nonnihil carperetur; tantamque opinionem timoris prae-buit, ut jam ad vallum castrorum hostes accedere auderent.

## QUESTIONS ON THE ABOVE TRANSLATION.

Give the case of *his* and the reason.

Give the principal parts of *praeerat*.

Give the synopsis of *praeerat* in the mode, person and number in which it is found.

Give the principal parts of *tenebat*.

Give the synopsis of *tenebat* in the mode, person and number in which it is found.

What is the construction of *quae*?

What does *quae* connect?

What is the construction of *quibus*?

What does *quibus* connect?

Compare *magnas*.

What is the subject of *coëgerat*?

Give the principal parts of *coëgerat*.

Give the synopsis of *coëgerat*.

Give the construction of *Aulerci* and *Lexovii*.

Give the construction of *senatu*.

Give the principal parts of *interfecto* in the active.

Give the principal parts of *interfecto* in the passive.

Give the participles of *interfecto*.

What does *quod* connect?

What is the construction of *auctores*?

Give the principal parts of *nolebant*.

Give the synopsis of *nolebant* in the mode, person and number in which it is found.

Give the synopsis of *nolebant* in the subjunctive, third, plural.

Give the synopsis of *clausuerunt* in the indicative, third, plural.

Parse *undique*.

Give the subject of *convenerant*, add account for its number.

What does *quos* connect?

What is the construction of *quos*?

Parse *praedandi*.

Give the subject of *revocabat* and account for the number of *revocabat*.

What is the construction of *loco*?

What is the construction of *castris*?

What does *quum* connect?

Give the reason for the mode in *consedisset* and *faceret*.

Give the reason for the tense in each, and account for the difference.

Give the principal parts of *faceret* in the active.

Give the principal parts of *faceret* in the passive.

Give the reason for the mode in *veniret* and *carperetur*.

Parse *nonnihil*.

Give the principal parts of *praebuilt*.

Give the construction of *hostes*.

Give the infinitives of *accedere* in the active and passive.

Give the principal parts of *auderent*.

Give the synopsis of *auderent* in the mode, person and number in which it is found.

## FOURTH CLASS—FIRST YEAR.

### PHYSIOLOGY.

1. What are ligaments? What is cartilage?
2. How are the various organs of the body benefited by exercise?
3. Of what use is the skin? Name the layers. State in what respects they differ.
4. Name the glands in the skin. What follows the checking of the perspiration?
5. Name the digestive fluids. How do they act upon the food?
6. How far is digestion under our control?
7. Describe the heart.
8. What are the special organs of respiration? How may the organs of respiration be so improved as to increase their capacity and power?
9. Why does an injury of the spinal cord produce paralysis of motion in one leg and at the same time a loss of sensation in the other?
10. Name the coats of the eye. Through what transparent media must light pass to reach the retina?

### ALGEBRA.

1. Explain the difference between  $5m + n$  and  $5(m + n)$ .  
Explain the difference between  $3a$  and  $a^3$ .  
What sign is understood between the letters in  $a^4 b^3 c^5 d^2$ ?  
What sign is understood before them?

2. Give value of  $x^9$  and prove it. In what other way might  $x^9$  be written? Prove the answer.

3. Resolve into three factors  $a^5 - 9ax^3$ .

“ “ four “  $a^4x - x^9$ .

Factor  $6a^3 + 15a^2b - 4ac^2 - 10bc^2$ .

4. Write the first four and last three terms of  $(a^3x^2y^m - b^5m)^{24}$ .

5. A train of cars, moving at the rate of 20 miles per hour, had been gone 3 hours, when a second train followed at the rate of 25 miles per hour. In how many hours will the second train overtake the first?

6. There is a certain number consisting of two figures. If 7 be added to their sum, the result will be three times the left-hand figure; and if from the number itself 18 be subtracted, the places of the figures will be reversed. What is the number?

7. Given  $\frac{\sqrt{x} + 27}{\sqrt{x} + 2} = \frac{\sqrt{x} + 21}{\sqrt{x} + 1}$ , to find  $x$ .

8. Find the value of  $x$  in  $\sqrt{x+15} + \sqrt{x} = 15$ .

9. Find the simplest form of the sum of  $3\sqrt{\frac{2a}{5}}$ ,  $2\sqrt{\frac{a}{10}}$ ,  $4\sqrt{\frac{a}{40}}$ .

10. Simplify  $a + b + c - (a - b) - (-c + b) + (-b - c)$ . In removing a parenthesis what becomes of the sign preceding? Give the reason.

#### ANCIENT HISTORY.

1. Name the most famous of the Persian kings, and state something which characterized the reign of each.

2. Name the principal events in Grecian history.

3. What were the principal powers of Greece before its conquest by the Romans?

4. Mention five noted Greeks and for what distinguished.

5. Give a brief sketch of the age of Pericles.

6. Give an account of one of the following events: secession of plebeians; appointment of decemvirs; Licinian struggle; war with Pyrrhus.

7. What persons are associated with the following events: first Punic war; battle of Zama; siege of Carthage?

8. When and how did the civil strife begin and end?

9. Name the persons who were most prominent during the civil strife and give an account of one.

10. What was the Pretorian Guard?

What was the Campus Martius?

## BOTANY.

### I.

Give characteristics of two of the following families: Papavera-ceae, Ranunculaceae, Ericaceae, Leguminosae.

### II.

Name the parts of a complete leaf.

Name the substance which gives leaves their green color.

Draw spatulate and oblanceolate leaves, and mention any likenesses and differences between them.

Describe serrate and dentate margins and compare them.

Tell the difference between pinnate and palmate leaves.

### III.

Explain the use of pollen.

Tell the difference between cohesion and adnation.

### IV.

Draw salver-shaped and funnel-shaped corollas and note differences between them.

Define bell-shaped corolla and give an example.

## V.

Draw monadelphous and syngenesious stamens and compare them.

Define epipetalous and hypogynous stamens.

Mention three modes of dehiscence of anthers.

## VI.

Define simple and compound pistils.

How does a one-celled pistil with central placenta arise?

Describe two different pistils which might arise from the union of five carpels.

## VII.

Draw cyme, corymb, and umbel.

In what respect are all these alike?

Tell the difference between a cyme and a corymb.

Tell the difference between an umbel and a corymb.

## VIII.

Give example of the following sorts of inflorescence: thyrsus, spadix, raceme, catkin, head.

## IX.

Classify the fruits of the following: corn, cucumber, milkweed, orange, pear, bean, maple, peach, dandelion, oak.

## X.

Analyze and describe the plant with which you are supplied.

## LATIN READER.

Translate :

Inde Macedoniam domuit ; et quum ex Eurōpā in Asiam rediisset,



hortantibus amicis ut Graeciam redigeret in suam potestatem, classem quingentarum navium comparavit, eique Datim praefecit et Artaphernen; hisque ducenta peditum millia, et decem equitum dedit.

Alcibiades summā curā classem instruit, atque in bellum adversus Lacedaemonios perrexerit. Hac expeditione tanta subito rerum commutatio facta est, ut Lacedaemonii, qui paulo ante victores vigerant, perterriti pacem peterent; victi enim erant quinque terrestribus proeliis, tribus navalibus, in quibus trecentas triremes amiserant, quae captae in hostium venerant potestatem.

## QUESTIONS ON THE ABOVE TRANSLATION.

Give the principal parts of *domuit*.

Give the synopsis of *domuit*.

What does *quum* connect?

What case does *in* govern and why?

Give the principal parts of *rediisset*.

Give the synopsis of *rediisset* in the subjunctive.

Give the reason for the mode in *rediisset*.

Give the reason for the tense in *rediisset*.

What is the construction of *amicis*?

Give the principal parts of *redigeret*.

Give the synopsis of *redigeret* in the mode in which it is found.

Give the reason for the mode in *redigeret*.

Give the reason for the tense in *redigeret*.

What is the construction of the clause: *ut Graeciam redigeret in suam potestatem*?

Give the gender, number and person of *ei*. With what does it agree?

What is the construction of *ei*?

Give the principal parts of *praefecit* in the active.

Give the principal parts of *praefecit* in the passive.

What is the construction of *his*?

What is the construction of *peditum*?

Give the principal parts of *dedit*.

Give the synopsis of *dedit* in the indicative.

Give the construction of *expeditione*.

Parse *subito*.

Give the principal parts of *facta est* in the active.

Give the principal parts of *facta est* in the passive.

Give the construction of *qui*. What does it connect?

What is the construction of *victores*?

Give the principal parts of *viguerant*.

Give the principal parts of *perterriti*.

Give the participles of *perterriti*.

Give the gender, number and case of *perterriti*. What does it limit?

Give the reason for the mode in *peterent*.

What is the construction of *proeliis*?

What does *quibus* connect?

What is the construction of *quibus*?

Give the subject and object of *amiserant*.

What are the gender, number and person of *quae*, and why?

What is the case of *quae*? What does it connect?

Give the principal parts of *captae* in the active.

Give the principal parts of *captae* in the passive.

Give the participles of *captae*.

# QUESTIONS

SUBMITTED TO THE

GRAMMAR SCHOOL SCHOLARS FOR ADMISSION

TO THE

HIGH SCHOOL, JUNE, 1883.

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## ARITHMETIC.

1.  $\left(\frac{1-\frac{1}{2}}{2} \times \frac{2-\frac{1}{2}}{3} \times \frac{3-\frac{1}{2}}{4}\right) + \frac{4\frac{1}{2}}{5} = ?$

2. Multiply  $12\frac{1}{2}$  ten millionths by 8 millions,

or

A merchant buys at 20 and 10 per cent. off, and sells at 20 and 10 per cent. on. What is the gain per cent.? — or both.

3. A merchant sold stock at  $3\frac{1}{2}$  per cent. premium and gained \$2,135. Find the par value.

4. I bought a horse for \$180. What must I ask for him that I may take  $12\frac{1}{2}$  per cent. less than I ask and still gain 15 per cent.?

5. Find the cost of the carpeting for a room 24 feet long, 18 feet wide, if the carpeting is  $\frac{3}{4}$  of a yard wide, and costs \$2.50 a yard.

6. A merchant expended \$6.00 for goods and sold them at a gain of 20 per cent.; he invested the proceeds in goods and sold them at a loss of 20 per cent. Find the net sum gained or lost.

7. A note for \$1,200, payable in 90 days, was discounted at a bank on the day of its date. Find the proceeds, money worth  $4\frac{1}{2}$  per cent.

8. *A, B and C* gained in trade \$12,480. *A's* share was twice *C's*, *B's* was four times *A's*. Find the share of each.

9. What will be the cost of digging and walling the cellar of a house 45 feet long, 25 feet wide and 6 feet deep,—the walls being  $7\frac{1}{2}$  feet high and  $1\frac{1}{2}$  feet thick, if the excavating costs 45 cents per cubic yard, and the wall \$4.50 a perch?

10. A cylindrical cistern, 12 feet in diameter, is 30 feet deep. Find its capacity in gallons.

#### GRAMMAR.

1. Write the *plural* of money, key, hypothesis, motto, canto, sheaf, crocus, duty, elf, wharf.

2. Give the principal parts of sit, lie (to recline), lay, work, drink, clothe, smile, throw, hide, bind.

3. Compare ill, far, near, late, wrong, rough, much, little, upright, polite.

4. *Parse*: It is better to *work* than to *beg*. It is as good as *gold* and much better than *lead*. That book of *yours* has been stolen.

5. *Parse*: John says he *will* not *study*, his teacher says he *shall*. Truth crushed to earth *shall rise* again; the eternal years of God are *hers*.

6. *Parse*:

*What* though in solemn silence all  
Move round this dark terrestrial ball,  
In Reason's ear they still rejoice.

The boy walked his *horse*. I was not aware of his being so brave a *soldier*. In the vale of years *beneath*, a grizzly *troop* are seen.

7. Give the principal rules for the use of the comma.

8. *Correct*: Is it me? I shall lay down when I have finished my book. I stand on rather a narrow strip of land. In England every one is free when they touch the land. He was under obligations to have returned the book.

9. *Correct:* New England has a healthy climate and soil. A squirrel can climb a tree quicker than a man. The books were to have been sold to day. Our teacher told us that air had weight. The oldest of the two were drowned.

10. Write sentences illustrating the various forms of the verb; common passive (with voice), passive (without voice), progressive, emphatic.

### GEOGRAPHY.

1. Describe the physical features of Africa.
2. Draw a map of the *New England States* from memory.
3. Name the exports of Russia, of France, of Oceanica, of Turkey, of Africa.
4. Locate *Canton, Smyrna, Cairo, Lyons* and *Rio Janeiro*, and name the leading industry of each.
5. Draw a map of the Mississippi River and its principal branches, locating important cities, etc.
6. Name the States that border upon the Mississippi River.
7. What waters would a vessel sail upon in going from St. Louis to Odessa? From Chicago to St. Petersburg? From Montreal to Alexandria?
8. Name the political divisions with their capitals of Europe.
9. Give the *latitude* of Providence, Chicago, Rome, Washington, Paris, Quebec, Lima, London, Canton, Havana.
10. Draw a map of the Rhine River.

### HISTORY.

1. Give an account of the discovery of North America by the Cabots.
2. Give an account of the Puritans and the settlement of Plymouth.
3. Fall of Quebec?

4. Give an account of the battle of Bunker Hill.
5. Siege of Yorktown and surrender of Cornwallis.
6. The Federal Constitution, define ; state causes which led to its adoption.

The three departments of government provided for in the Constitution, name and define.

7. New States, how formed and admitted?
8. Judicial power, in what vested? Term of office of the Judges, etc.
9. Kansas Nebraska Bill. Battle of Chancellorsville, 1863.
10. Assassination of President Lincoln.

#### SPELLING.

Surplice, circuit, suspense, sirloin, communicate, domicile, utensil, zephyr, syllable, sillabub, surveillance, trisyllable, pupillary, capillary, criticism, witticism, cylinder, carnelian, diphtheria, cimeter, simile, cynical, heliotrope, heroes, cantos, cuneiform, balustrade, benefiting, separate, generate, stupefy, aspirate, billion, billious, anonymous, anomalous.



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